



THE AUSTRALASIAN JOURNAL OF
PHARMACY

THE OFFICIAL JOURNAL OF THE ASSOCIATED PHARMACEUTICAL ORGANISATIONS OF AUSTRALIA
OFFICIAL JOURNAL OF THE PHARMACEUTICAL SOCIETY OF NEW ZEALAND

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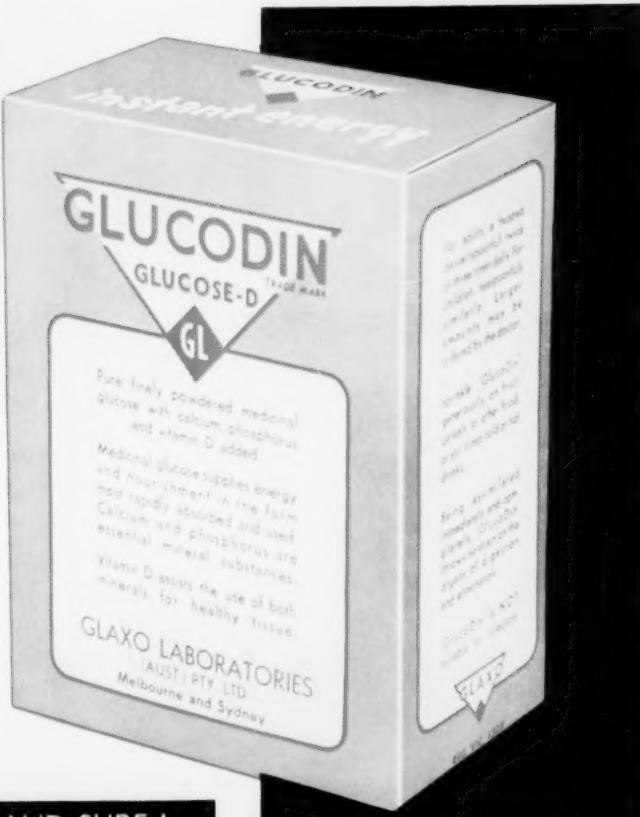
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OFFICIAL ANNOUNCEMENTS

PHARMACY BOARD OF VICTORIA

EXAMINATIONS

Preliminary Examination:
Commences November 19.
Entries close November 5.

Final Examination:
Commences November 17.
Entries close October 27.

Intermediate Examination:
November 3.
Entries close October 13.

By Order of the Board,

F. C. KENT,
Registrar.

360 Swanston Street,
Melbourne.

PHARMACY BOARD OF NEW SOUTH WALES

Watch this column for advice concerning
the next Qualifying Examination

P. E. COSGRAVE,
Registrar, Pharmacy Board of N.S.W.,
52 Bridge Street,
Sydney.

PHARMACEUTICAL DEFENCE LIMITED ANNUAL ELECTION

It is hereby notified that an Election will be held to fill TWO ORDINARY VACANCIES on the Board of Directors of Pharmaceutical Defence Limited and to elect an Auditor on the 26th day of November, 1958. The retiring Directors are Messrs. Daniel Alexander Lees, of Ivanhoe, and John William Pollock, of Alexandra. Monday, the 3rd day of November, 1958, has been appointed as the day of nomination. Nomination papers of candidates for the offices of Director or Auditor must be lodged or delivered by post with the Secretary at the registered office of the Company, Fourth Floor, "Guild House," 18-22 Saint Francis Street, Melbourne, before 4 o'clock in the afternoon of the day fixed for nomination. In the event of more candidates being nominated than there are vacancies, a POLL will be taken on the 26th day of November, 1958.

V. G. MORIESON, Returning Officer.
Melbourne, September 30, 1958.

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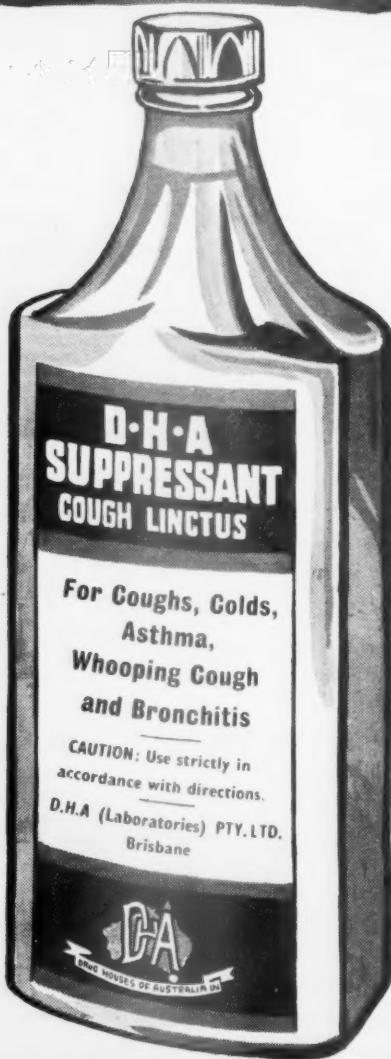
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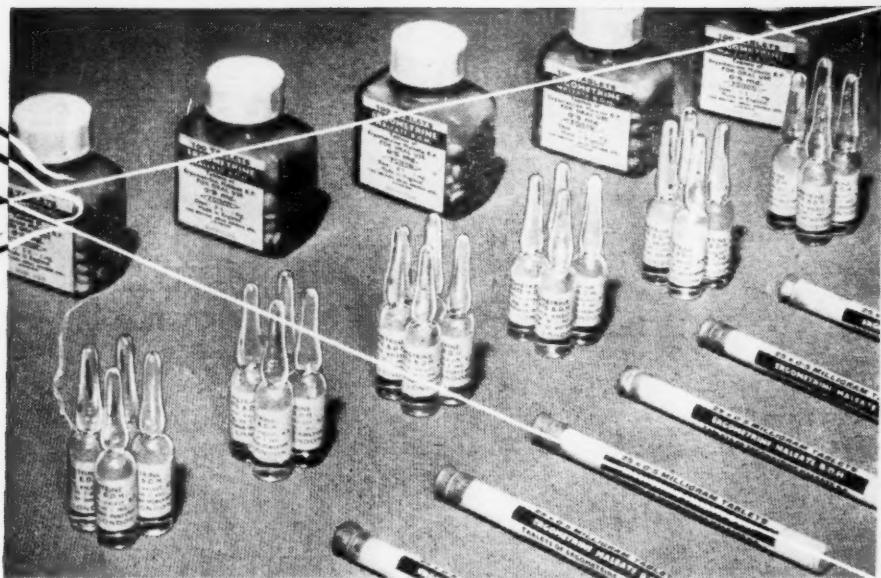
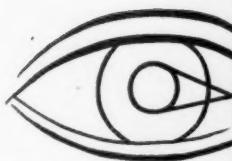
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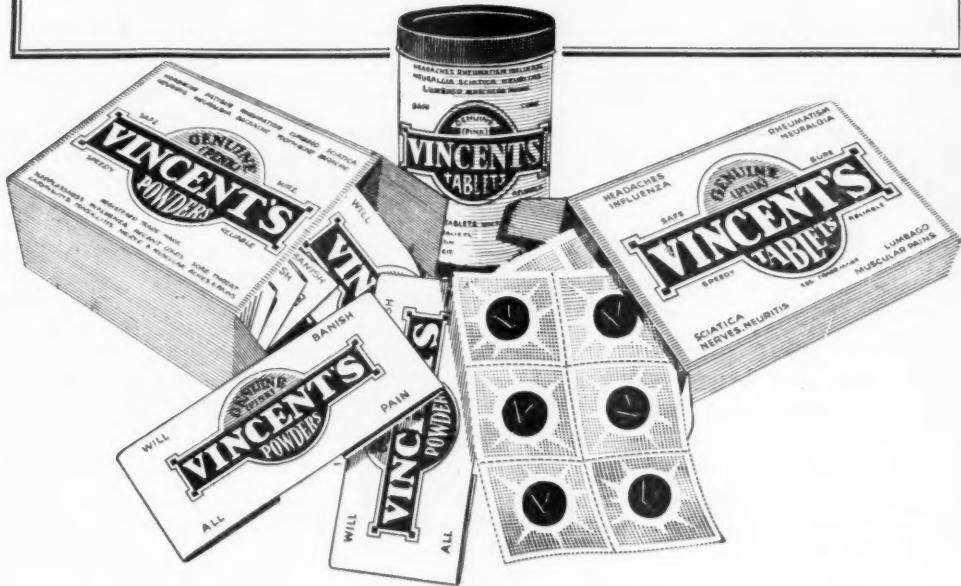
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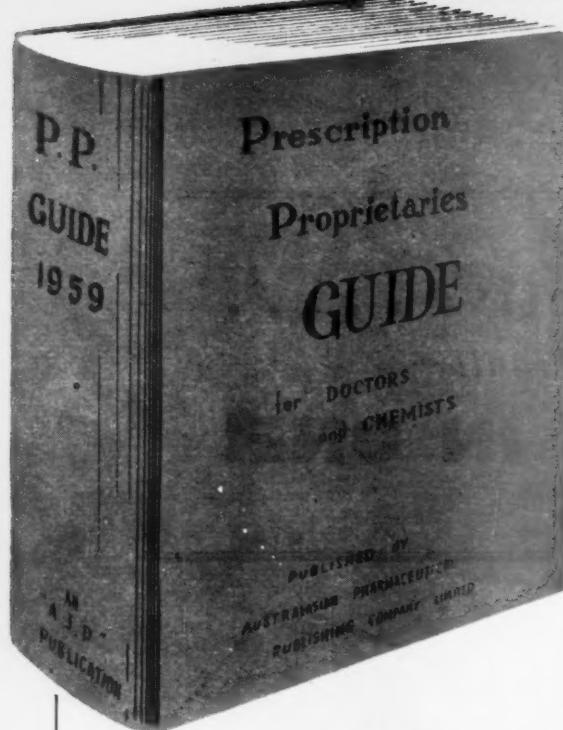
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Test Prescriptions

ALARGE number of test prescriptions have been presented at pharmacies by inspectors of the Commonwealth Department of Health in recent months.

As a result of the analyses of the medicines dispensed, a number of chemists have been advised of alleged discrepancies and several have been publicly reprimanded.

Before a chemist is reprimanded he appears before a Committee of Inquiry, consisting of brother chemists. All of the circumstances of his case are considered by the Committee and he has an opportunity of explaining his side of the reports of either the inspector or the analyst.

Proceedings of the Committees of Inquiry are rightly confidential. What takes place at the hearings is not revealed outside. The functions of the Committees of Inquiry are to ascertain the facts in each case and only to recommend to the Minister of Health what action should be taken. The Minister or his Director-General are the only people who take action.

The Committees are neither judicial bodies nor tribunals with penal powers. They are more in the nature of fact-finding committees. Any action taken, therefore, on the recommendation of a Committee of Inquiry may be assumed to be soundly based. Members of the Committee, however, naturally rely upon the evidence presented when considering any particular case. Sometimes the only evidence before a Committee is the report of a single analyst. Consideration of such evidence may be deferred, but is difficult to ignore.

A prudent business man satisfies himself that the goods and services he buys are up to standard. He must be satisfied that the quantity and quality are in accordance with his order. This applies also to governments. They have an obligation to protect the public purse. The testing of prescriptions by the Commonwealth is a necessary administrative procedure which must be accepted.

Pharmaceutical chemists and their organisations will admit this and will be ready to condemn faulty service.

Testing of prescriptions is not without difficulty. Analysis of medicinal preparations is notoriously complex. Specialised apparatus is very often required, and considerable experience in this field of work is an essential qualification of the analyst. Much research may be necessary by an analyst in respect of an assay of a certain combination of drugs.

These factors obviously restrict the range of test prescriptions. Those used must be such that when submitted to analysis positive quantitative and qualitative determinations can be made, without recourse to unduly complicated methods of analysis.

This is of vital importance. Before a person is challenged with inaccurate dispensing evidence in support of the challenge must be available and must be beyond question. There are very strong indications that a prescription used very extensively in recent tests did not meet all these requirements. This prescription called for sodium bicarbonate and sodium citrate in solution.

Skilled analysts with long experience in drug analyses concede that there is much difficulty in devising a procedure to obtain exact results in a mixture such as this.

The carrying out of check analyses of the mixture has revealed what appears a further weakness.

In at least three cases which have come to our notice the analyses of the sample tested officially and the check analyses differed widely.

Further investigation has strengthened the opinion that with this prescription and the method used in dividing the mixture into three parts, there can be a very uneven distribution of the ingredients in the three samples, even when great care is taken.

To allege inaccurate dispensing therefore on the results of analysis of one such sample could not in the circumstances be justified.

Those who move amongst and are in close contact with pharmaceutical chemists providing the national pharmaceutical services have no doubt that the overwhelming majority of them are giving a good honest service, are well aware of their professional responsibilities and are conscientiously carrying out their duties in the National Health Service.

There is scarcely a member of the profession who does not take pride in the accuracy and standard of his work. That being so, any suggestion that he has been found lacking or has been careless, or indifferent to his responsibilities, hurts him.

That is why it is so important that an allegation of faulty work should never be made unless there is irrefutable evidence to support it.

THE MONTH

News of Pharmaceutical Events at Home and Abroad

Out of the Reach of Children

The danger inherent in leaving potent substances in cupboards, drawers and other places where children's exploring fingers can find them was tragically underlined at a recent inquest in Melbourne.

A small child, together with his slightly older brother, was left for some minutes alone in the house while the mother shepherded the older children across the road to school. During her absence the younger child found a bottle of tablets which had been prescribed for the mother and ate some of the contents.

In spite of efforts to save him, the child died.

Both the doctor and the chemist had cautioned the mother to keep the tablets out of reach of the children, but the family, recently arrived from Europe, have little knowledge of English. Thus, unfortunately, the poisonous nature of the tablets was not fully comprehended by the mother.

It is realised that under such circumstances the conveying of adequate warning of the hazards which adult prescriptions present to children does present difficulties but it is not impossible.

We therefore appeal to chemists to continue to warn of the danger of leaving potent and poisonous substances within the reach of children and to ensure that such warnings are understood.

Action of this nature can be the means of preventing further similar tragedies.

United States Government Scholarships —Fulbright Travel Grants

Applications for travel grants are invited from Australian students and scholars planning to undertake study, research or lecturing at American institutions of higher learning during the American academic year 1959-60.

The awards will meet the cost of fares to and from the United States, but applicants will be required to secure their own dollar funds and university admission.

Travel grants are available in three categories:

1. Post-graduate students: For regular courses of study at the post-graduate level.
2. Research scholarships and lecturers: For advanced research (usually at the post-doctoral level) or for lecturing at an American university.
3. Special categories: For scholars without highly specialised academic qualifications, but who have obtained admission to an American university.

For further information and application forms write to the United States Educational Foundation in Australia, Box 89, G.P.O., Canberra, A.C.T.

Carbromal and Bromvaletone

The question as to whether preparations of Carbromal and Bromvaletone should be brought under control by including them in the poisons lists has been under consideration in the U.K. for some considerable time. The Poisons Board recently clarified the position by announcing that such preparations were not to be controlled.

"The Pharmaceutical Journal" of July 19, 1958, published a statement by the Home Secretary made in the House of Commons on July 9 in reply to a question. Mr. Butler said:

"The Poisons Board, at its meeting on June 18, decided that the evidence before it was insufficient to warrant any change in the recommendation made by the Board in 1955, that preparations containing carbromal, or carbromal and bromvaletone, should not be controlled under the Poisons Act. I feel bound to accept this recommendation. The Minister of Health proposes, however, at the suggestion of the Board, to invite the committee on drug addiction, recently set up under the chairmanship of Sir Russell Brain, to examine further the risks attending the abuse of such preparations."

Third Pakistan Pharmaceutical Conference

The Third Pakistan Pharmaceutical Conference and Exhibition will be held at Karachi from November 28 to December 2, 1958. In the brochure concerning the con-

ference which we have received the Vice-President, Mr. A. A. Quraishi, states:

"Karachi, with its pleasant mornings, bright sunshine, breezy evenings, and cool and dewy nights, awaits you. You will enjoy visiting our wonderful beaches, or seeing the age-old caravans, proceeding to the distant villages of Makran or the fishermen spreading their nets in the early sunshin., or the gaily dressed men and women buying and selling their goods at vegetable markets. You will be amused to see the most varied means of transport which exist in this city of ours."

The programme for the conference contains a number of very interesting items and fixtures. Any Australian chemist wishing further information on the Third Pakistan Pharmaceutical Conference should write to the Secretary of the Organising Committee of the Conference at 28 Aziz Chamber, Opposite City Court, Karachi, Pakistan.

"The Story of Your Guild"

This brochure was written and designed by Mr. K. G. Attiwill, who had been requested by the Federal Council of the Guild, at its annual meeting last year, to prepare in a suitable form a factual account of the reasons why the Guild was formed, and of its striking 30-year history of achievement.

A diminishing minority of the Guild's present membership of almost 4000 is all that is left of the retail chemists who were in business when manufacturers, wholesalers and distributors dealt with individuals instead of a closely-knit Federal organisation. Only a comparatively small percentage of present Guild members went through the depression.

Every Guild member will receive a copy of the brochure, and a sufficient quantity will be sent to Guild branches to enable them to carry out the Federal Council's decision that every new member of the Guild will receive a copy of the brochure upon joining the organisation. This will be done over the next two years or so, and when the present edition of the brochure has been exhausted, the Federal Council intends to have a new edition printed, embodying any important changes that may have occurred in the interim.

Pharmaceutical Association

The Executive of the Pharmaceutical Association has announced that the next meeting will be held in Adelaide from May 25 to June 2, 1959.

The last meeting of the Association was held in Melbourne in May, 1956. Thus three years will have elapsed between meetings.

A strong South Australian Committee has been set up to make arrangements, and already a preliminary timetable has been drafted. This includes many interesting items.

Adequate first-class accommodation will be available for all visitors.

Every qualified pharmaceutical chemist is eligible to apply for membership and to attend the meetings. Further information can be obtained from the Secretaries of State Pharmaceutical Societies and State Branch Committees of the Guild.

The A.N.Z.A.A.S. Conference

Full marks are due to the Section "O" organising Committee in Adelaide, which was responsible for the arrangements for the conduct of the Section "O" meetings.

Arrangements were perfect; a completely satisfying programme was available; hospitality, both organised and private, was truly generous, and the enjoyment of delegates catered for in an excellent manner.

A number of the papers contributed are published in this issue of the Journal. The range of subjects was varied and comprehensive, and altogether the meeting was entirely successful.

Every care was taken by the local committee that delegates wherever possible were met on arrival in Adelaide and escorted to hotels. Introductions were made and a general welcome extended at a reception at the University on the evening of August 20. Social functions included a dinner dance given by the Council of the Pharmaceutical Society of South Australia at the Hotel Elizabeth, an excursion to the Barossa Valley and the Seppelts' Winery at Seppeltsfield on Sunday, a theatre night ("Salad Days"), and a farewell luncheon.

The Cost of Pharmaceutical Services

A Correction

In our February, 1958, and August, 1958, issues we quoted figures of the cost of the Commonwealth's National Health Services between 1946 and 1956.

In the August issue the actual figures were corrected, but the relation of the increase in year cost was confused between "times" increase and "percentage" increase.

The initial cost for the year ended June 30, 1946, was £1,111,292. For the year ended June 30, 1956, £40,360,815. The initial cost has multiplied 36.319 times.

Australian and New Zealand Association for the Advancement of Science

A.N.Z.A.A.S.

Thirty-Third Meeting

ADELAIDE

AUGUST 20-27, 1958

President:

PROFESSOR M. L. E. OLIPHANT, D.Sc., F.Inst.P., F.A.A., F.R.S.

Presidential Address: "Science and the Survival of Civilization."

Hon. General Secretary: Professor J. R. A. McMillan, M.S., D.Sc.Agr.

Hon. Secretary for Adelaide Meeting: R. S. Burdon, D.Sc., F.Inst.P.

SECTION O—PHARMACEUTICAL SCIENCE

President: A. W. Callister, F.P.S., Pharmacy Board, Victoria.

Presidential Address: "A Survey of Drug Controls."

Hon. Secretary, Section O: W. B. Blanks, A.U.A., Children's Hospital, Adelaide.

Place of Meeting: Darling Building, University of Adelaide.

PUBLIC LECTURES OF THE CONFERENCE

"L. F. Giblin and the Frontier of Research on the Australian Economy," by Sir Douglas Copland, K.B.E., C.M.G., LL.D. (First Giblin Memorial Lecture.)

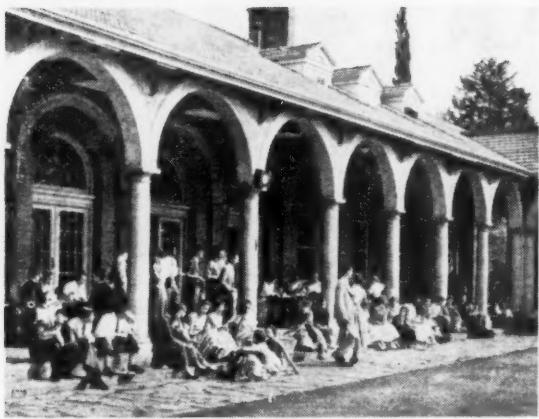
"War in this Century," by Sir Keith Hancock, M.A.

"India and the West," by Dr. Tara Chand.

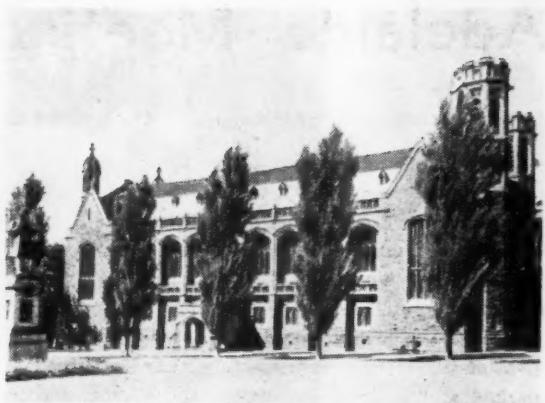
"I.G.Y. and Antarctica," by P. G. Law.

Masson Lecture: "The Renaissance of Inorganic Chemistry," by Professor J. S. Anderson, F.R.S.

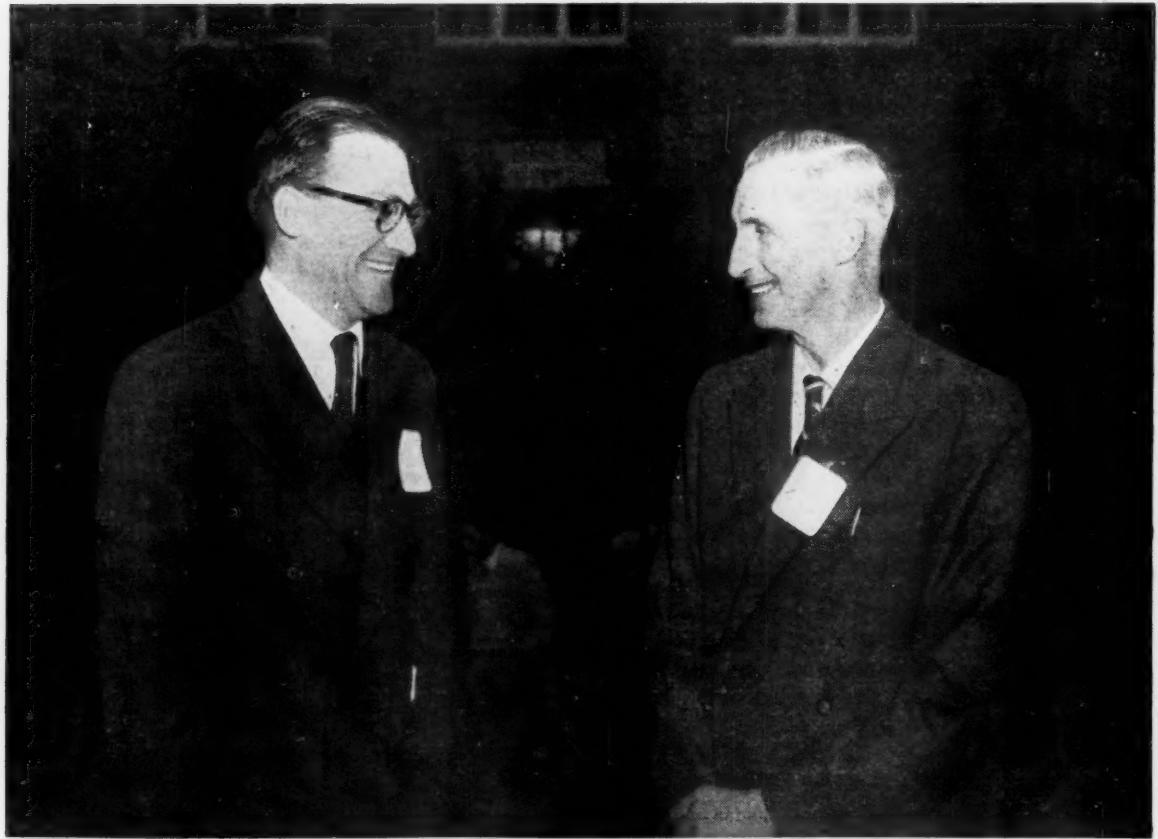
Liversidge Lecture: "Activated Metal Catalysts in Organic Syntheses," by Professor G. M. Badger.



Cloisters, Students' Union, University of Adelaide



Bonython Hall (University of Adelaide), in which the Public Lectures of the Conference were delivered



Mr. R. A. Anderson (left) and Mr. A. W. Callister (President, Section O).

Adelaide Meeting A.N.Z.A.A.S., 1958

Extract from "A Message of Welcome" by the Premier of South Australia, Sir Thos. Playford:

"It is twelve years since the last Adelaide Congress, which was the first meeting after World War II. Great changes have taken place in the State's economy since that meeting. We faced difficult problems of post-war reconstruction. Tremendous advances have been made in housing—in primary production, and in the development of secondary industries—this latter has been most marked and I desire to express appreciation for the assistance rendered the Government by scientific and technical officers who have given so much practical support. Government scientific departments have expanded and such institutions as the Waite Institute, the University, Weapons Research Establishment, and many others have all contributed to the progress and development of South Australia."

Extract from "A Welcome to the University" by J. M. Napier, Chancellor, University of Adelaide:

"The University is very glad to provide facilities for so many of Australia's and New Zealand's scholars and teachers in the wide realm of science to assemble for discussion of their special subjects and to share in the intellectual refreshment and invigoration that must ensue. It believes firmly that the value of intellectual communication is enhanced by the deeper understanding that is promoted by the personal associations that meetings of the Association afford. No less valuable, though perhaps less directly and apparently so, will be the increased awareness that will result in the community at large of the far-ranging and intimate part that science plays in life and thought today."

Extracts from the Presidential Address, "Science and the Survival of Civilization", by Professor Marcus Oiphant:

"The two great nuclear Powers now stand armed with H-bombs, deliverable at a moment's notice and sufficient in number and power to destroy completely the whole of North America and of Western Europe and to do great genetic harm to the remainder of mankind. Most men of science agree with Bertrand Russell about the unprecedented dangers which now overhang the human race. Those who disagree are those politicians and opportunists who will allow their personal or national interests to outweigh all thought for humanity."

"Some 70 per cent. of all world expenditure upon scientific and technological developments of every kind is now devoted directly to war effort. High salaries and excellent facilities for work ensure that defence science recruits adequate numbers of men, even though the best brains remain outside the restrictive barriers of security. One of the grave difficulties faced by a large section of the scientific community today is the need to work under conditions of secrecy. Behind the screens of security science is apt to accumulate a body of men of average ability unleavened by the independent minds upon which real advances always depend.

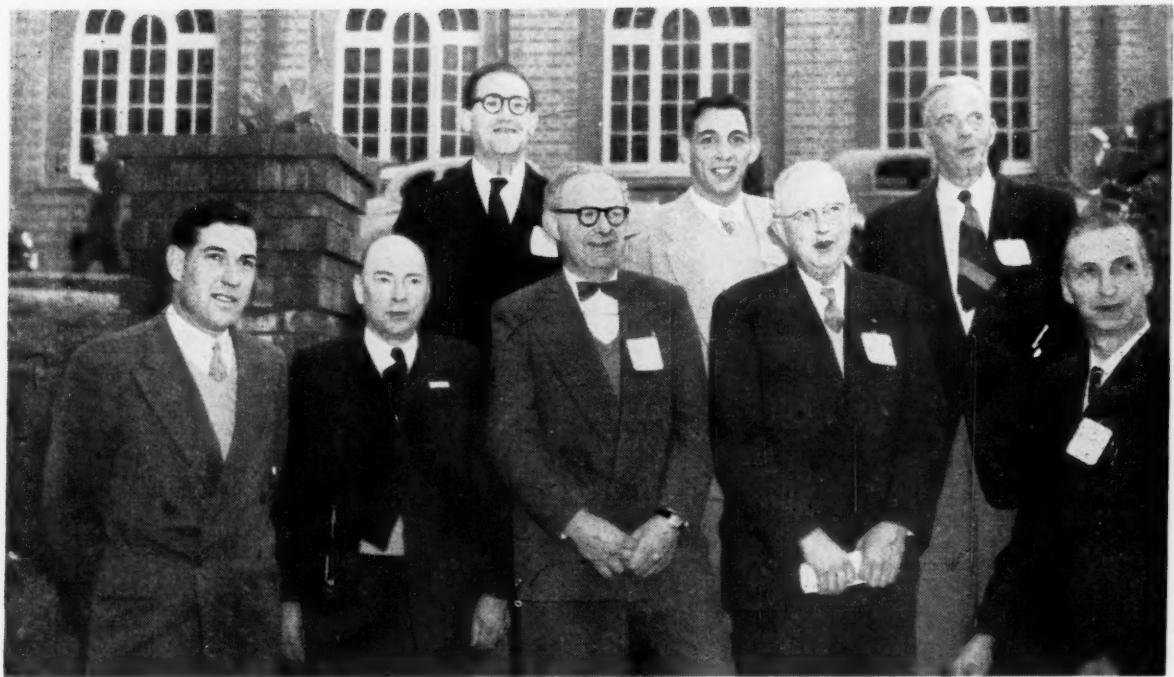
"I believe the quality of scientific and technological effort in a non-secret defence system would more than counter-balance the knowledge which an enemy would have of our developments.

"The flowering of science under Government auspices has produced several other disturbing results. Trained men are so hard to get that essential institutions such as schools and universities are robbed of staff for official purposes. This has had a catastrophic effect on teaching. More seriously the complete honesty and openness so essential to good science is now challenged by Government establishments, especially those associated with defence or national prestige.

"Some men of science write for newspapers and some reporters try to write correctly about scientific matters but newspaper reporting of science and technology is, in general, insufficient, unreliable and poor in quality.

"Another serious difficulty today is the deplorable intellectual gap between those who have had a scientific education and those who have not. Practically all Government Ministers and members of the administrative civil service belong to the latter class. Every scientist who has been concerned with the formulation or execution of policy must have experienced the baffling difficulty of conveying his thoughts to someone who does not know the ABC of his subject.

"The creation of an Australian equivalent of the Parliamentary and Scientific Committee in Britain could lead gradually to a new awareness in the Commonwealth Parliament and Government of the social significance of science."



Left to right—Back row: Messrs. R. A. Anderson, W. B. Blanks, F. C. Kent. Front row: Messrs. D. F. J. Penhall, S. A. Downie, K. Porter, H. A. Braithwaite, A. W. Callister.



Members of the Local Organising Committee of Section "O" taken on the steps of Pennington Hall, North Adelaide, with the President of the Section (Mr. A. W. Callister)



General view of Farewell Luncheon extended to Interstate visitors to Section "O." The luncheon was held in Pennington Hall, North Adelaide, on Wednesday, August 27, 1958

Uniform Poison Laws

The Presidential Address to Section "O," "A Survey of Drug Controls," was given by Mr. A. W. Callister (Victoria). It is printed in full in the August issue of this Journal. The afternoon session was devoted to a discussion on Uniform Poison Laws.

Mr. E. B. Pollard (N.S.W.) said:—

In his presidential address Mr. Callister has very ably said some of what I had in mind, but there are some aspects of Uniform Poison Laws from the manufacturer's point of view, which I would like to add. My interest in this matter arises from the fact that I was asked (with Mr. Ron Young, then of D.H.A.) to act as a Technical Adviser for the Drug and Allied Trades Council, in their discussions with the N.H.M.R.C. Poisons Sub-Committee.

Poisons Law in this country is laid down by seven different authorities, i.e. the six States and the Commonwealth. Each State has its own laws and appropriate authorities for administering and amending them. In some States two different authorities administer two types of laws. In addition the Commonwealth has certain over-riding powers under the Commonwealth Therapeutic Substances Act and also has power to regulate the sale of poisons in A.C.T. and the Northern

Territory. Thus there are seven different Poison Laws for ten million people. This position may be reasonable from a geographical administrative point of view, but unfortunately none of the States' laws are uniform and each can be altered without any reference to any other body. Each State is sovereign and autonomous.

For the retailer of poisons the resulting position is not so difficult; he only has to observe one set of regulations in his business and he can reasonably be expected to know the law. But the position of the manufacturer is very different. He distributes in all six States and in Canberra and Northern Territory as well, and he must label and distribute his goods according to the laws of each of those States. If he intends to market a new drug or preparation, he has then to look up all these seven laws and see how he can fit his labelling for all of them. He cannot undertake to label separately for each State; this would be quite uneconomic for a market of, say, 39,000 people (Canberra) or 18,500 (N.T.). As an example of different treatment in different States I would quote Ephedrine:

New South Wales: Label "Caution—Use strictly in accordance with directions." Open sale.
Victoria: Ditto.

Queensland: Label "Poison." Prescription only.
South Australia: Prescription only.
Tasmania: Label "Poison" and name and address of seller. Open sale.

West Australia: Free of restrictions.

I propose to confine myself in this talk to the aspects of this problem affecting the manufacturer. These are, primarily, labelling and packaging. No attempt is made to cover the licensing of sellers of poisons and the licensing of users, but we must make some observations on the method to be used to deal with new products or modification in scheduling of individual drugs.

Many proposals have been put forward in the past regarding Uniform Poisons Law, but none have been successful.

History of Present Proposals

The present proposal for Uniform Poison Laws arose from the National Health and Medical Research Council which in 1956 set up a Poisons Sub-Committee to look into the matter and bring forward proposals. This Sub-Committee has as its members representatives of the Pharmacy Boards in all six States.

It put forward in August, 1956, Draft Poison Schedules. These were received in Industry with considerable interest, and immediate steps were taken to discuss with the Committee the objections which Industry had to parts of the proposed Schedules. These were vigorously discussed at a meeting in February, 1957, and in May of that year re-drafted Schedules were issued by the N.H.M.R.C. Sub-Committee.

In these revised Schedules many of the points raised by the trade had been modified, but several matters remained which in the view of manufacturers needed revision. Manufacturers circulated these to the trade and put forward further comments. These were considered by States representatives, and a further meeting with Dr. Cook (the Chairman of the N.H.M.R.C. Poisons Sub-Committee) was held in April, 1958.

These conversations on the draft Uniform Poisons Laws are still going on, but there is good hope that, with good will, a draft will be evolved satisfactory to all concerned. As far as manufacturers go, they are whole heartedly in favour of uniformity, as they are the group most affected by variations between States.

The Presidential Address to Section "O" of A.N.Z.A.A.S. contained an outline of the present proposals, but I propose to fill in some details and comment on some proposals which are new.

Present Proposals in Outline

In the draft Uniform Poisons Laws substances are classed under eight schedules. These are:—

Schedule 1. "Substances which are extremely dangerous to human life."

LABEL **POISON S1.**

Approved name, quantity, preparation, or percentage.

Name and address of manufacturer or wholesaler.

Antidote if required.

The substances named are usually found in "Part 1 Poisons."

Schedule 2. "Substances dangerous to human life if misused or carelessly handled."

LABEL either **POISON S2.** when not prepared or packed for resale for internal use."

Approved name, quantity, percentage.

Strength or proportion, manufacturer's or supplier's name and address.

Antidote (when indicated).

OR

CAUTION S2. "When prepared and packed for resale for internal use."

"Use strictly in accordance with the directions."

Approved name, quantity, %, strength, or proportion.

Manufacturer's or supplier's name and address.

Antidote (when indicated).

The substances named are the usual "Part 2 Poisons."

The alternative labelling CAUTION instead of POISON is excellent for those everyday remedies, e.g. Laxative Vegetable Tablets containing small portions only of Poisons, which is bad to label "POISON." It also avoids the awkward wording used in Victoria as follows: "This preparation is labelled Poison in accordance with the Poisons Act, but if taken in strict accordance with the prescribed doses, is not dangerous."

Schedule 3. "Substances for therapeutic use of a sufficiently dangerous nature as to warrant their distribution to be restricted to specially qualified persons."

LABEL **CAUTION S3.** "This preparation should be used only under medical supervision." Particulars as S1.

The substances under Schedule 3 are, for instance, Adrenaline, Bromides, Insulin, Carbromal, Bromvalone, Glyceral Trinitrate, and so on.

Manufacturers have some objection to some of these, and contend that if allowed on open sale, the words "use only under medical supervision" are misleading. They would prefer to see some of these transferred to Schedule 2. (under Caution—use strictly in accordance with the directions).

Schedule 4.

(A) Therapeutic substances which are in a form sufficiently dangerous or harmful to require the wholesale distribution to be restricted to specially qualified persons and the supply to consumers to be restricted to that prescribed or ordered by a medical practitioner, or in the case of specified substances, by dentists or veterinary surgeons.

(B) New therapeutic substances shall be submitted to a committee appointed by the National Health and Medical Research Council, who shall, without delay, allocate these substances to their appropriate schedules where necessary. Until so allocated, all new therapeutic substances shall be included in this Schedule.

LABEL **CAUTION S4.**

Approved name, quantity, percentage.

Manufacturer's name and address.

"Supply of this preparation except on prescription is illegal."

The substances named are those described as "Restricted" or "Specified" under States laws. They include a large number of "blanket" clauses.

Comment

The second paragraph of the general statement of contents above caused some concern when the first draft proposal was put forward. This draft stated that manufacturers were first to be licensed and that records of all purchases and disposals were to be kept. The words POISON and CAUTION were to be optional. In addition all new substances (the word new being undefined) were to be examined by a committee of experts who would evaluate them, indicate their schedule classification and approve the names.

The objection of Industry was that the keeping of separate records would be an enormous job in view of the wide range of drugs included, but it was later explained that the normal business records would suffice. However, the job of tracking the total disposal of stocks through these records would be enormous, if not impossible, so that the whole process of recording was virtually unworkable. It would involve full Narcotics control for a wide range of relatively harmless substances.

I am glad to say this record proposal has been dropped. Similarly, Industry raised objection to the approval of names by the committee. "Approved names" are already recognised in Britain and Inter-

nationally, and further censorship, in addition to the normal trade mark obstacle, was felt to be a potential

However, Industry has a sense of responsibility in this matter and recognises that to have a product initially and uniformly placed in a Schedule would be an advantage if not too long delayed, and has accordingly put forward a counter proposal for allocation of the Schedule number (or none) of any substance likely to be affected. This is still under discussion. The object is to obtain a quick decision, so that new products are not held up unduly. It must be realised that the Schedule number is to be put on every label, so that printing could not start until the Schedule number has been allocated.

Anyone concerned in the marketing of new products knows how long it already takes to have labels and cartons prepared; the possibility of adding to this time lag is viewed with apprehension.

Another objection by Industry is to the inclusion in this Schedule of "blanket clauses" covering a wide range of substances. Each of these clauses is intended to cover a certain group, but while some may be logical, others are too vague, e.g. "Hypotensive Substances." Industry urges that present inclusions should be individually named. After the Schedules came into force, of course, each new substance would be automatically named and put forward into a Schedule, so that for them "blanket clauses" will have no application.

Schedule 5. Household Poisons. Commonly used for Domestic Purposes.

LABEL **POISONOUS S5.**

Keep out of reach of Children, also Not to be taken—queried as unnecessary.

Approved name, %, manufacturers or suppliers, Name and Address.

Antidote and directions for first aid where indicated.

EXTRA LABELLING.

- (1) Avoid contact with skin.
- (2) Avoid contact with skin and avoid breathing dust and vapour.
- (3) Warning, this substance is caustic.

REFER TO SCHEDULES FOR SUBSTANCES NAMED.

Schedule 6. Substances, very dangerous to human life—packed for Agricultural, Pastoral or Horticultural Use.

LABEL **POISON S6.**

Approved name, Quantity, %, Name and Address of manufacturer or supplier, Antidote, Purpose for Use and directions. "Not to be used for any purpose." First aid directions, and 3 others.

- (1) Avoid contact with the skin.
- (2) Avoid contact with the skin and avoid breathing its dust and vapour.
- (3) Warning, This substance is inflammable.

Container Stipulation.

REFER TO SCHEDULES FOR SUBSTANCES NAMED.

Schedule 7. "Particularly Poisonous or Dangerous nature."

Special labels to be laid down in regulations.
REFER TO SCHEDULES FOR SUBSTANCES NAMED.

Schedule 8. Narcotics.

LABEL **POISON S8.** "Illegal to supply except on prescription or persons without authority." Any % included. No exemptions as in N.S.W.

The substances named are **those under International Narcotics Control.**

These then are the present Proposed Uniform Poisons Schedules.

The Manufacturers' Point of View

Manufacturers are in favour of uniformity of Poisons Laws. The outstanding matters on which they at present are discussing with the committee are:

- (1) The question of the shape and colour bottles to be used for "dispensing" poisons.
- (2) The method and speed of scheduling new substances (as discussed under Schedule 4 above).
- (3) The desirability of having substances individually named instead of being included under what are called "Blanket Clauses." Once existing drugs have been named, then all "new" ones will be automatically scheduled as such under the proposed Schedule 4 classification routine.
- (4) The desirability of having a general exemption for Industrial Usages, as in S.A., N.S.W. and Great Britain.
- (5) Necessity for modification of labels for ampoules.

I do not wish to debate these points here, as they are the subject of discussion at the present time, but mention them to indicate how wide the agreement has been so far.

Other matters still to be finalised are:—

- (1) The routine to be followed if a desire arises in a particular State to alter the Schedule Classification of any particular drug; i.e. each State to alter without consultation and on its own initiative, or are such alterations to be submitted to a central committee?

Summary

The present proposals give an opportunity of putting into practice a revision which is long overdue. The next step is that each State should amend its own Poisons Laws to come into line with the agreed Schedules. At present Queensland and Tasmania seem likely to do this, but little real progress can be registered until New South Wales and Victoria (not forgetting South Australia) can come into line.

Is it too much to hope that common sense and a wide viewpoint will prevail and that some local autonomy will be sacrificed? The advantages of these proposals are very great.

Mr. President, Ladies and Gentlemen, I would urge you in your own spheres of influence to do all you can to bring about the adoption of these Schedules in your own State.

Dr. S. Wright, Associate-Professor Pharmacy, N.S.W., was the next speaker. He said: "I have been asked to start the ball rolling to get some discussion going. I think Mr. Manning went to some trouble a little while ago to count up the number of restricted drugs which at present appear in the B.P. 1958. He found 27 per cent. of the drugs in the Pharmacopoeia are restricted and 47 per cent. in actual frequency of prescribing are restricted. The position is getting more complicated and it won't get any simpler. New drugs are going to be brought out. We have seen this from Mr. Callister's address this morning, and unless we make some attempt in Australia to simplify our own approach, the position is going to become quite hopeless in years to come. The longer the delay in bringing these uniform schedules into operation, the more difficult it will become. There always has been, of course, a traditional approach to poisons legislation, and it is very hard to break with tradition. Most of our poison laws here are based on the original British laws, and they have not in every respect been able to stand up to the advances in pharmaceutical chemistry and advances in pharmacology. This traditional approach, however, has been very useful for building upon, and it is something that we cannot

PHARMACEUTICAL ASSOCIATION OF AUSTRALIA

KODAK
TRAVELLING SCHOLARSHIP
Number 4 — 1959

The Pharmaceutical Association of Australia has pleasure in announcing that the directors of KODAK (AUSTRALASIA) PTY. LTD. have again donated the sum of ONE THOUSAND POUNDS, this to be awarded as a TRAVELLING SCHOLARSHIP in 1959.

CONDITIONS OF AWARD

The following conditions of award of the Scholarship have been adopted by the Executive of the Association

1. Objects of the Scholarship. The objects of the Scholarship are to enable the holder:
 - (a) to further his training by means of post graduate studies and/or research in a particular aspect or aspects of Pharmaceutical Science;
 - or (b) to investigate methods used abroad in Pharmaceutical Education and post-graduate courses for pharmacists.
 - or (c) to undertake a comprehensive study of one or more of the following aspects of Pharmaceutical practice:
Retail and/or Institutional Pharmacy.
The Economics of Pharmacy.
The laws affecting the practice of Pharmacy.
2. The applicant must:—
 - (i) be a registered Pharmaceutical Chemist and a graduate of a recognised pharmaceutical establishment in Australia.
 - (ii) be not more than 35 years of age on December 31, 1958.
 - (iii) submit to the Association an outline of the project he proposes to carry out, together with evidence of ability to do so.
 - (iv) submit with the application the names of two suitable persons as referees.
3. The successful applicant will be required:—
 - (i) to reside outside of Australia for a period of not less than twelve months, and undertake studies, investigation or research in Great Britain or such other countries as may be approved.
 - (ii) to submit to the Association periodic reports on his work at times to be agreed; and a detailed report within three months after expiration of the Scholarship.
 - (iii) by arrangement with the Association, if requested, deliver a lecture or lectures or addresses on his work abroad in two or more States of the Commonwealth.
 - (iv) to give an undertaking that he will return to Australia and remain in active association with Pharmacy for at least two years after expiry of the Scholarship.
4. Applications must be addressed to the Honorary General Secretary of the Association and marked "Application for Kodak Travelling Scholarship" on the envelope.
5. The award will be made by the Executive of the Association.
6. The latest date for receipt of applications is October 15, 1958.
7. If in the opinion of the Executive no suitable application is received no award will be made.

break with too quickly. We must remember that in legislating for the control of poisons we are trying to protect the public, not to make the way easier for the manufacturer or the pharmacist, but to protect the public from accidental consumption of dangerous substances. You cannot prevent people from taking Lysol or from using Carbon Monoxide, so the great emphasis is on the accidental mishandling of these substances. This, of course, involves some sort of control of storage both before sale and after sale. It is the after-sale storage that we have no control against, and therefore we must look to some sort of educative process to which the public have to be introduced and which the pharmaceutical societies have been concerned about in the last year or so. The sale has to be restricted to the people who know something about poisons, or at least are instructed as to their very dangerous nature and, finally, the label which is the only safeguard which you can pass on to the public has to be adequate. The uniform poisons schedules which have been drawn up by the committee which was set up originally by the National Health and Medical Research Council have been concerned with the requirements for storage and labelling, and have left the sale (and the decision as to who will sell these substances) to the individual States. At one stage of poisons legislation, everything was labelled poison. The tendency is to get away from this, because if people cry wolf for long enough, they become quite blasé about the word "poison" and think nothing of it. And that is why the labels which have been outlined by Mr. Pollard contain other wording besides the word "poison." "Poison" is just a case of being either black or white, and it has been felt for a long time that this is quite inadequate, and most of the modern poison laws take cognisance of this fact.

Pharmacy has a very important responsibility in the sale and labelling and storage of poisons. In most of the States of Australia the Pharmacy Boards are of importance in the legislation which has been enacted for poisons.

I don't need to go into all of these details, but you must know that this is one of the reasons why pharmacists are given protection by law, and as they are given protection by law to set up pharmacy, so must they accept the responsibility to do something with and about the poisons law which is handed on to them to administer. I know that some of these laws are very irksome, and that irksome features of poisons law are outdated. I refer to the necessity in New South Wales and in Victoria to label Schedule 2 poisons with the name and the address of the vendor. The pharmacist's name and address on the immediate container and label has, as far as I can see, no valid purpose in this type of legislation. If the preparation is labelled "poison" (or whatever wording is required) and has the nature of the source, many poisons of a less dangerous nature could well be sold simply with these requirements, and the uniform poisons schedule looks after that. So that you see the position is full of difficulties that one comes up against in pharmaceutical practice.

The need for regulations is obvious. What is to be included in the schedules is one of the main bones of contention. I think we have to strike some sort of happy medium. In Britain the tendency is to allow things to go rather freely, and not to try and control too many things. I feel that if the pharmacist were to accept full responsibility for his professional services, and be very cognisant of his responsibility in this field, a lot of the control which we envisage would not be entirely necessary, but unfortunately there are other people who would abuse these privileges and who have not got the sense of responsibility we would like them to have. There are things, therefore, that are included in the schedules which should not be necessary. That is in the hands of pharmacy itself, and it is a responsibility which we must try and educate our pharmacy colleagues to accept.

Now the uniform schedules that have been outlined by Mr. Pollard seem to be the minimum number that we can get away with at the present time. These were required by manufacturers. The reasons for this have been outlined by Mr. Pollard, and they are quite obvious when he mentions the number of different labels that are required in the Commonwealth for ephedrine, etc. It just becomes farcical.

This situation did develop in America not so very long ago, when all the States had different poisons legislation, but now that has been overcome by the States acquiescing to the recommendations of the Federal Food and Drug authorities. I would emphasise that these poisons schedules have been set up as a service by the Commonwealth Department of Health. There is no Commonwealth direction in this matter, simply because the Commonwealth has no power to direct, but what has happened is that a Committee produced some suggested schedules for consideration. The Commonwealth cannot just force these on to the States. This can only be done by agreement and by negotiation.

In the course of this deliberation it was felt that some sort of referee committee would be necessary, especially for the handling of Schedule 4 drugs. This is the committee to which Mr. Pollard referred, and to which all new drugs have to be submitted. This committee is not set up by the Federal Government, nor by the Federal Health Department, but it is set up by the National Health and Medical Research Council and it is responsible only to the N.H.M.R.C. The committee is only a proposal at the moment, so that any direction to this committee would not come through the Health Department, but only from the N.H.M.R.C., which is quite a different matter to saying that it comes from the Health Department. The chief bone of contention in this Schedule 4 is the proposition of these clauses in Schedule 4 which the President referred to this morning, and which Mr. Pollard also has referred to and somewhat condemned.

The difficulties in blanket clauses are well known to you all, particularly if you have tried to classify a new drug and to see whether it comes under any of the present schedules, but I don't think we can get away from them. I feel that blanket clauses based on chemical classification are very safe, provided that we know what is meant by the word "derivative," and this is the loophole which the President pointed out again this morning. I think that most people who have had anything to do with chemistry of organic substances know pretty well what is meant by the word "derivative," and I am quite sure that in any Court of Law the dictionary definition of "derivative" would not be the one that would be applied to this type of substance. It would be a chemical definition. The second type of blanket clause, that which is based on both a chemical and pharmacological classification, is also, I feel, a very safe one, and it is quite easy to sew substances up into such a classification and I think there is very little ambiguity.

The third type of blanket clause, in which a pharmacological classification only is given, is rather loose, and this is a blanket clause which is only put in, I feel, as a means of classifying drugs under certain groups, and that if a product is to be included under a pharmacological heading, the drug itself must be named under that particular section. I would refer to antimalarial substances, for example. This is how it is written in the uniform schedules. "Antimalarial substances such as Amodiaquine, Chloroquine, Mepacrine, Pamaquin, Primaquine, Pyrimethamine, Proguanil, and Sontoquine. This would mean that only those substances which are actually named would be controlled, and that all antimalarial substances are not necessarily controlled because the definition of an antimalarial substance is much too wide. I feel that the main point in this type of blanket clause is merely to

PFEIFFER TRAVELLING SCHOLARSHIP 1959

The Federal Council of the Guild has pleasure in announcing the Gustavus and Louise Pfeiffer Research Foundation travelling scholarship, 1959.

The scholarship is valued at \$3,375 (about £A1,500).

OBJECT OF SCHOLARSHIP

The object of the scholarship is to train young Australian pharmacists for future positions of leadership within the profession by extending to them at a young age the opportunities of overseas experience and study.

CONDITIONS OF THE PFEIFFER SCHOLARSHIP

1. The applicant must:—

- (i) Be a graduate of an Australian Pharmacy Department and a registered Pharmaceutical Chemist.
- (ii) Be preferably not more than 30 years of age on 31st December, 1959.
- (iii) Submit to the Federal Council an outline of a proposed project, supported by evidence of the applicant's ability to carry it out.
- (iv) Submit the names of two suitable referees.

2. The project submitted must impinge upon one or more of the following categories:—

- (i) Teaching.
- (ii) Advanced Studies.
- (iii) Higher Degrees.
- (iv) Research.
- (v) A study of the methods and conditions of pharmaceutical practice in any of its aspects, such as Retail, Wholesale, Hospital, Manufacturing, National Health; and may include such aspects of practice as organisation, merchandising, display and advertising.

(It would be necessary in some instances for the successful applicant to visit different centres in the United States.)

3. The successful applicant will be required:—

- (i) To reside in the United States of America for not less than ten months.

- (ii) To submit to the Federal Council periodic reports on his work at intervals to be agreed upon, and a detailed report after the expiration of the scholarship.
- (iii) By arrangement with the Federal Council, to deliver, if so required, a series of lectures or addresses on his work in America in two or more States of the Commonwealth.
- (iv) To give an undertaking that he will return to Australia and remain in active association with Pharmacy for at least two years after expiry of the scholarship.

4. Applications should be addressed to the Federal Secretary, The Federated Pharmaceutical Service Guild of Australia, 18-22 St. Francis Street, Melbourne, Victoria.

5. The latest date for lodgment of applications for the 1959 scholarship will be 30th November, 1958.

Notwithstanding the foregoing requirements, the Federal Council may in its discretion consider applicants whose qualifications are not altogether as outlined above.

The award may be terminated at any time by the Federal Council, if there is a good reason.

The Federal Council may vary the conditions of the award, if it so desires, from time to time.

collect a number of drugs together, mainly for the convenience of the user of the Schedule, and by actually naming the substances themselves under their approved names, a manufacturer and the pharmacist is left in no doubt.

There is another type of blanket clause in this Schedule which I personally think would not stand up to any examination in a Court of Law, and which I would disagree with, but which has been put in because one State in particular feels that it is important to have such a blanket clause present. I refer to a clause such as this: "Hypotensive substances having or purporting to have such properties not specifically included in this or any other Schedule." Well, a hypotensive substance is a fairly wide coverage, and I feel that you would really have to be prepared to get down to a rather more detailed scheduling than that. However, these schedules were put up as a basis for discussion, and I think that they certainly have served that purpose. We have seen the work that Mr. Cunningham and his department have had to do to get this discussion on some sort of a basis so that everyone can understand it, and we can at least say that it has incurred quite a lot of work. As far as the method of adopting these schedules by the different States is concerned, that is a rather delicate matter. I perhaps might leave that to Mr. Cunningham to explain because he is in closest contact with any changes that are occurring or are likely to occur in the States.

I just feel that all I have to do now is to present these points from the point of view of the Committee (of which I am a member) which set up these Schedules.

Mr. F. C. Kent (Victoria): I think, Mr. Chairman, it is a fact that for over 50 years this question of uniformity of schedules, packaging and labelling has been under active consideration. Commonwealth conferences of Ministers of Health, the Chief Officers of Health, and heads of departments have met at intervals and have confirmed the desirability of this, and have gone back to their respective States and, so far as we know, whatever decisions were reached were never implemented or actively canvassed in the States. I believe, personally, that we are nearer now to a solution of the problem than we have ever been, and the discussions here this afternoon clearly point to this. We have the representatives of the D.A.T.C. and the representatives of three States all expressing the view that uniformity is absolutely desirable. Now I do believe that with a feeling and an attitude such as that, it is only a matter of the correct approach and the correct machinery. I don't think the machinery at present in operation will do this. I think that to make any effective advance in the direction of uniformity we need to put at least representatives of three of the bodies which are primarily responsible for the formulation of legislation and the administration of the legislation into active conference, and that I believe will be the solution of reaching some definite action. I think there was a glorious opportunity missed some few years ago when New South Wales introduced a new Poisons Act. Very strong efforts were made to bring Victoria and New South Wales into conference at that particular time. The basis of uniformity was almost there. The New South Wales Act very closely resembled the Victorian Act in the lay-out of its schedules, and those efforts to bring these States into conference failed. The approach was made through the Commonwealth Health Department, and then followed a direct approach, but before any form of conference could be arranged, the schedules in New South Wales were introduced. The reason given was the scare about thallium at that time and the need for hasty introduction of a complete set of schedules. I do believe that a more representative conferring of the bodies directly interested in the making of the legislation and the administration of it, together with the obvious desire to bring about uniformity, might be effected in that way.

TACTICS IN FORMULATION

By H. E. R. Barker

Formulation is the process of finding what particular composition of a mixture is best for a particular purpose. This paper sets forth a few general principles that have been found successful in practice.

It is a common but mistaken view that there is not as much need for formulated products as there once was. We are used to thinking that organic chemists so carefully tailor the molecules of new substances to their particular purpose that admixture with a view to modifying their properties is not necessary. The truth is that of all the modern synthetics in current use hardly any is used for any purpose at all without planned admixture with some other substances.

In pharmacy it is often said that compounding of drugs is no longer required. The fact is that hardly any drug is ever used in its pure state and there is more compounding going on than ever before, though not the same people are doing it as formerly. Before a drug can be compressed into tablets, filled into capsules or ampoules, it must be mixed with diluents, binding agents, disintegrating agents, lubricants, bacteriostats, etc.

In other industries the position is similar. Liquid fuels and lubricants are carefully balanced mixtures of hydrocarbons with ignition retardants, lead scavengers, pour-point depressants and so forth. It is the same in the confectionery industry, packaged food industry and the paint industry. Rubber as it is used and moulded plastic articles are blends of latex or synthetic resin with fillers, colourants, accelerators or catalysts, plasticisers and lubricants. In fact there is not an explosive, an insecticide, a dye, an adhesive and scarcely a metal or a drug that has any extensive use without prior formulation.

Though all this admixture is going on, there is an amazing lack of interest in the subject in general. For example, until very recently one could not take out a patent in Australia for a mixture of substances, and even now the formulation must be something special before it can become the subject of a patent; there is nowhere that one can get formal training in the subject (a good pharmacy course is the nearest thing), no textbook is published on it (though Bennett's Formulary and Fisher's Design of Experiment give some advice). Everyone thinks formulation is easy, but few chemists have much idea of how to go about it. Competence in formulation seems to be pretty well restricted to some pharmacists, the authors of formularies, some physical chemists (especially those in the surface chemistry field) and certain technologists specialised in some branch or other of industrial chemistry.

Some biochemists are unconsciously good formulators and use the technique as a research method when they try to reproduce an *in vitro* model of some biological reaction. In fact the degree of confidence that biochemists have in their theories of metabolism is to a large extent determined by the extent to which they can replace naturally occurring material with synthetic mixtures to bring about some step or other in metabolism.

A classic example of how the technique has been used to elucidate natural processes is the work of Frazer in 1944 on the absorption of fats from the intestine. He mixed fats with bile salts and glycerol monostearate and showed that only in one particular mixture could they be emulsified under the conditions obtaining in the intestine and to a degree of fineness that is observed in the intestine. Frazer correctly deduced from that that partial hydrolysis of fat to glycerol monostearate is necessary for absorption to take place.

Selecting the Ingredients

The ingredients to be used are generally decided pretty well on rational grounds rather than by experiment. We usually know what the active ingredient is to be. We also have a list of properties to be possessed by the final preparation. Thus we know whether the vehicle, base, diluent or extender (different industries have different terms for the same thing) will be a solid or a liquid, whether it will be oil-soluble or water-soluble. Consideration of the use will determine the colour, flavouring or perfume. Our list of required properties and the natures of the components already in mind will decide whether a preservative, wetting agent, buffer, sequestering agent or something else is required.

The formulator should then write down a sort of formula in general terms. For example, if the preparation is to be an oily cream he might write:—

Active Ingredient,
Perfume,
Emulsifier,
Water,
Oily vehicle.

Then for each component excepting the active ingredient and the water he should write out as long a list as he can think of, of all the possible candidates. Inspiration for this purpose can come from many different sources. Many begin by consulting formularies, looking into precedents or commercial products, their own stocks of raw materials and reagents, suppliers' catalogues and so forth. Anyone continuously engaged in formulation should keep files on various kinds of components (emulsifiers, preservatives, etc.) into which he places literature references and then draw on them when required, because nowhere can one get published lists, and though the chemical literature is as well organised and indexed as any, you cannot get on to the latest abrasives or wetting agents by looking up an index—chemical compounds are nearly all indexed under their names, not their uses.

The next step is to reduce the numbers of the candidates by rationalisation. Incompatibility (known or deduced from the structures) will eliminate many. Toxicity will eliminate many more. In this country availability wreaks a heavy toll. Finally, get the prices of the survivors and it is surprising how many more fall by the wayside.

When we are left with more than one possible substance for each ingredient (and we usually are) there is sometimes nothing for it but to make several series of experimental preparations, each series containing each possible candidate. The total number of formulations required may be very large. For example, if in the case of the oily cream, we are considering two possible perfumes, three emulsifiers and two oily vehicles, each of which is to be explored in four concentrations, the number of permutations is 768. There would be more than 40 hours' work preparing these at three minutes each (i.e. without homogenisation). There would be several more weeks involved in evaluating the samples and interpreting the results.

Every possible effort, therefore, should be made to reduce the number of candidates as far as possible—even if some preliminary experimental work has to be undertaken.

This can easily be done when the resultant property of the final preparation is known to depend on what the physical chemists call a colligative property of the ingredient under consideration.

For example, the effectiveness of any perfume in a mixture depends on its vapour pressure in that mixture. In our cream the vapour pressure of the perfume will in turn depend on its concentration and solubility in the oily vehicle. We can simply compare the perfumes, then, by titrating each of the oily vehicles, say vegetable oil and liquid paraffin, with each of the perfumes in turn, taking a satisfactory odour as endpoint. Of course, if any of the other ingredients had

an odour it would have to be included in some fixed concentration in each of the four systems. In this way we can rapidly decide which would be the better perfume to use in either a paraffin vehicle or a vegetable oil, and what concentrations of each, relative to the concentrations of oily vehicle, should be used. This latter figure can also be used to calculate how much perfume should be used in any mixture of vegetable oil and liquid paraffin. With this information we can safely leave the perfume out of the series altogether and just run one or two experiments later on to confirm our predictions. In this way we cut down the number of preparations to 96, which is about as many as one can conveniently manage in one run.

Another example of a preliminary evaluation of this kind is the case of sorbitol and glycerin, both of which are in common use as humectants to stop aqueous preparations from drying out. Weight for weight, sorbitol is much cheaper than glycerin, but humectancy is merely the power of lowering the vapour pressure of water and is a colligative property and depends on the molecular weight. Sorbitol has twice the molecular weight of glycerin, so that weight for weight it should be half as effective if these two substances obey the gas laws in aqueous solution. But as some 30 or 40% of sorbitol is required to reduce the vapour pressure of water to the water vapour tension in air of normal humidities, it is doubtful if sorbitol and glycerin do obey the gas laws at such high concentrations, for the gas laws only apply to dilute solutions. The matter has been put to the test in this way. Two pairs of solutions were prepared, one pair containing sorbitol and glycerin in equimolar concentrations (the iso-osmotic pair), the other pair containing them in iso-axiomatic concentrations—i.e. the inverse ratio to their prices so that each solution was of equal cost.

A small volume of sorbitol solution is then introduced into a capillary tube and another small volume of the glycerin solution theoretically iso-osmotic with it is introduced into the same capillary a millimetre or two away from it. The two ends of the capillary are then sealed off. The iso-axiomatic pair are similarly sealed into another capillary. The solution with the higher vapour pressure will now slowly evaporate water which condenses on the surface of its neighbour. Each day the tubes are examined under a microscope with a travelling stage and the lengths of the columns of liquid are accurately measured. In this way the length of the solution with the lower vapour pressure can be seen to increase at the expense of its neighbour.

What happens in this case is that the theoretically iso-osmotic pair remain constant and in the other capillary the glycerin solution grows at the expense of the iso-axiomatic sorbitol solution. The conclusion is that either glycerin and sorbitol both obey the gas laws in high concentrations or else they both deviate to the same extent and it is definitely cheaper to use glycerin (at least at current prices). Sorbitol of course has other properties which in some preparations may offset that.

Determining the Concentrations

There are two alternatives before us. We may vary the concentrations of one ingredient until we find its optimal concentration and then fixing its concentration at that level, vary another, and so on until we have the optional concentrations of them all. The trouble with this procedure is that the best formulation is sometimes missed—for in our cream example, if we found the optimal concentration of oil for one concentration of emulgant and then proceeded to adjust the concentration of emulgant, the concentration of oil that we settled on may not be the best in the presence of the amount of emulgant that we finally arrived at. Of course we could then go back and readjust the oil concentration, but after that we should need to readjust the emulgant concentration—and so on. Theoretically the task would never end, though in practice after three or four adjustments we do get as close as it is

worth bothering to go. The main objection to this consecutive approach is that it can be a long and drawn out business, for although fewer preparations have to be made, they cannot be done simultaneously, each succeeding preparation depending on the results of the previous one. If a change takes place on aging, each preparation has to be aged before the next one is made up. There are problems in evaluation too when the preparations cannot be examined simultaneously.

Whenever it is possible to do so, it is better to vary each ingredient simultaneously, making for each ingredient a series of preparations containing each concentration of each of all the other ingredients. For example, if we are to study three ingredients each in four different concentrations, we shall have 43 or 64 preparations to make. This is not as formidable a task as it sounds, for with a little planning some short cuts can be made and the work very much reduced. The information gained from this simultaneous approach is ample reward for the effort. One can see the trends in the resulting properties as the concentrations of the various ingredients are changed, and there is no doubt that the formula finally arrived at is not the best.

When the properties of the preparation are seen to vary sharply as the concentration of some ingredients changes, another series of preparations are made with the concentrations of those ingredients made intermediate between the two best values found in the previous experiment. Usually not so many preparations are required this time. For example, to study two ingredients each in three concentrations requires only nine preparations.

Experience has convinced me that when working with an unfamiliar system it pays to include the highest and lowest extremes of concentrations possible—that is, make for each ingredient a preparation containing as much of that ingredient as its cost, solubility or some other practical consideration permits, and another preparation, leaving the ingredient right out. Occasionally one finds that the highest extreme of concentration is not enough and further waste of time on a hopeless project is saved. Likewise, it is surprising how often it happens that what was considered an essential ingredient is not necessary at all. (Like the absent emulgent in Emulsion of Liquid Paraffin and Magnesium Hydroxide of the B.P.C.)

When the optimal concentration of an ingredient is suspected to be very low it pays to start with the highest extreme and then reduce it logarithmically—i.e. reducing it to a half or a tenth at each step. Then in a second run a more exact approach to the optimum can be arrived at by interpolating. In this way one can avoid running through scores of preparations before reaching an optimum concentration like 0.001%.

Just before making all the preparations it is a good idea to plot them out in a draft or plan for guidance. For two varying ingredients the plan would be a square, for three variables a cube, for four variables a series of cubes. (See diagram.) If there are more than four variables use the consecutive approach until the number of preparations necessary gets smaller. Each axis of the square or cube represents an ingredient being varied, and positions along the horizontal axis, say, are marked off 1, 2, 3, etc., to denote different concentrations of that ingredient. Along another axis mark off positions A, B, C, etc.; each Roman letter represents a concentration of that ingredient. The third axis (if a cube) can be marked off in Greek letters, δ , β , γ , etc. Thus we have a square of squares or a cube of small cubes as the case may be, each small square or cube representing one individual preparation.

The containers are next prepared and labelled—each with the code for the square or cube representing the preparation to go into that container, i.e. IA δ , IB δ , IC δ , and so forth. Then to avoid errors and speed the work, arrange the actual containers in an exactly corresponding square or stack them in a cube.

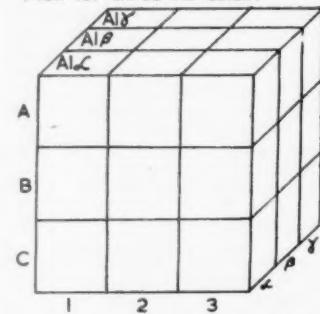
Suppose there are four ingredients, three of which we shall call Number, Roman and Greek, the fourth not being varied in the experiment, but Number, Roman and Greek being added each in three different concentrations (27 preparations are required). Start by putting into a large vessel enough of the fourth ingredient to make three lots. Then add enough Number to make three lots with Number in concentration 1. Next add enough Roman for three lots in concentration A. Divide

Plan for two variables.

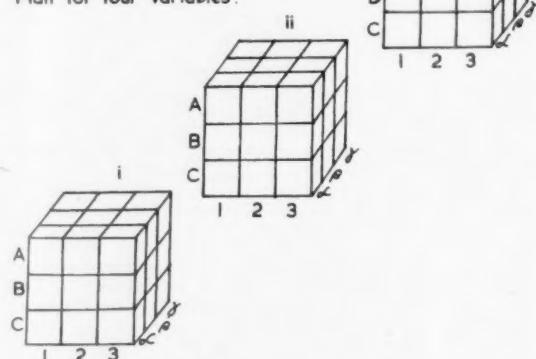
A		
B		
C		

1 2 3

Plan for three variables.



Plan for four variables.



this mixture into the containers A1 δ , A1 β and A1 γ , and to each add Greek in amounts δ , β and γ respectively. Then repeat the process for the next row, A2 δ , A2 β and A2 γ , and then the next row and so on. In this way the work can be reduced to practicable proportions.

After all this is done and we have decided upon the optimal concentrations of all the ingredients, so as to be sure that we have not settled on what happens to be a critical concentration of something or other, we should prepare another lot of samples with each ingredient in two concentrations, one slightly above and the other slightly below the optimum. The difference between these and the optima should be one and a half or twice the likely maximum error in production or dispensing. If all these preparations are satisfactory the final formula can be presented with the differences as the tolerances for the concentrations of the various ingredients.

Other Variables

The method of preparation is, of course, not a variable when there is no irreversible reaction and when only one phase is present, but it can be a factor when there are two or more phases—i.e. in emulsions or suspensions. There are usually two or more phases present when one gets different results in large scale production from what was obtained in the laboratory. When that happens, there is nothing for it but to carry out some pilot experimentation, scaling up the batch size in geometrical progression. The batch size then has the same effect on the plan as adding an extra variable, but pilot research is so expensive a business that the experimental batches have to be made consequentially.

If all the samples prepared throughout are kept and examined over a long period of time we add another dimension to our plan, for we can then see what is the best formula for any particular age of the product, and as everyone knows, that is not always the same thing as knowing the best formula for a freshly made preparation.

One more thing remains to be done. That is to make provision for rapid diagnosis of the trouble should unsuspected changes take place on storage. This can be done by preparing a series of samples, each with one ingredient missing—all the others being in optimal concentrations. Then if unexpected changes occur, the ingredients missing from those samples where the change does not take place are the ones causing the trouble. If this is not done and a change takes place after, say, two months, then one would have to wait another two months before being able to experimentally reproduce the change and start investigating it.

Evaluating the Samples

Of course numerical values for the various properties required of the product should be obtained whenever possible. Measuring the pH viscosity, surface tension, etc., presents no difficulties. Such qualities as flavour and odour which are required only for their subjective effects are best judged that way and simply recorded as "too weak," "too strong" or "about right." Other qualities such as adhesion, greasiness, dexterity, polishing performance, are more difficult. A little ingenuity can usually enable reliable numerical values to be extracted from samples without the construction of elaborate gadgets or the use of too much statistics. Frequently a series of permanent reference standards can be faked and the samples rated by comparison. For example, the cleanliness with which a liquid drains off a siliconed surface might be rated by setting up a series of reference standards prepared by splashing drops of melted paraffin wax on to a microscope slide and comparing them with the residue left after the run off of the sample from a siliconed slide. Barrier creams can be evaluated by applying the samples in parallel stripes on the forearm, waiting a suitable time and then painting on a streak of Indian ink. After a standard time the arm is thoroughly washed and the residual ink stains are compared with stains made alongside by painting on standard dilutions of Indian ink. The ease of resuspending the deposit that forms in a tin of paint after standing for some months can be accurately enough rated by noting the time taken for a practised person to stir it all up with a standard stick.

There is a trap in evaluating antiseptics and preservatives that is not always guarded against. The samples that show growth after inoculation and are therefore unsatisfactory may have failed because of a chance contamination with a stray species that did not enter the satisfactory ones. (It is desirable not to sterilise the materials and vessels for this kind of work unless fundamental information is being sought.) This chance contaminant may not even be the organism giving rise to the visible growth but in some way assists the growth of the inoculum. At the end of the test therefore the satisfactory samples should all be inoculated from each of the unsatisfactory ones and incubated again.

Evaluation, of course, should be carried out on samples submitted to the extremes of environment that the product is expected to survive. This usually means dividing each sample prepared into three or four subsamples, one for each environment (most often heat, cold and room temperature).

When a very large number of samples are to be evaluated it is often difficult to get a clear mental picture of all the results. In such a case it is necessary to give the matter some mathematical treatment. For a simple example of this let us return to our mixture of Number, Roman and Greek. If the samples were to be evaluated with respect to several different qualities it would be necessary to average all the ratings of a quality of all samples containing Number in concentration 1, then all with concentration 2 and all with concentration 3, and then do the same for Roman and Greek and for all the other qualities. Average quality ratings would then be plotted if necessary against the concentrations of each ingredient and the optima or best compromises between two opposing qualities can be readily picked out.

ENCAPSULATION OF PHARMACEUTICAL PRODUCTS

By Philip A. Berry, M.Sc., F.R.A.C.I.
Drug Houses of Australia Ltd.

Definition

Encapsulation may be defined as the process of enclosing a medicament in a shell or capsule. The capsule itself is prepared from a gelatin base containing glycerin in such proportion that the capsule is flexible or hard. Other products, such as cellulose derivatives, may be used in the preparation of the capsules.

The shape of the capsules varies enormously, but flexible capsules are usually spherical, ovoid or cylindrical with hemispherical ends, while hard capsules are cylindrical with hemispherical ends.

Official Recognition

The original use of capsules will be discussed a little later, but capsules were used in pharmacy long before they were afforded official recognition in the British Pharmacopoeia. As long ago as 1898 Martindale listed some twenty-seven products packed in capsules and defined the capsules as short tubes closed at one end and telescoping into one another. This obviously referred to what is known today as the hard gelatin capsule. The British Pharmacopoeia Codex of 1907 includes a formula giving the proportions of gelatin, syrup and glycerin for the preparation of capsules, the formulation obviously referring to what is now known as the flexible or soft capsule.

Continental Pharmacopoeias also mention capsules from 1906 onwards.

Capsules first became official in the U.S.P. in 1942,

but it was not until 1953 that the British Pharmacopoeia included monographs for five capsules. The number of official capsules in the 1958 Pharmacopoeia has been increased to nine. Colouring of the shell of the capsule is permitted in six of the monographs and mandatory in one, viz., male fern extract. Hard capsules are called for in two monographs, flexible capsules in six, while for the remaining monograph (Chloramphenicol) the nature of the capsule is not specified.

Historical Use of Capsules

As far as can be ascertained, the first preparation of capsules goes back 120 years before their introduction into the British Pharmacopoeia. It is recorded that the French pharmacist, Mothes, had the idea of enclosing a dose of medicine in a gelatin cell as early as 1833. The description of his method of making the shells is interesting. First of all, he made a mould of soft leather shaped like an olive, to this he tied the stem of a small funnel, mercury was poured into the funnel and distended the leather sac; on dipping the sac into fluid gelatin, a thin layer of gelatin adhered to the leather and, on cooling, the gelatin quickly congealed; by inverting the funnel, the leather sac collapsed and the capsule was slipped off.

In 1842 it is recorded that Chaston of Walton, Norfolk, produced capsules in England for administering drugs to animals and only later were these adapted to human use. His method of making the capsules was simpler than that of Mothes, but the capsules were of the same olive shape. Chaston dipped olive-shaped moulds made of brass into a melted gelatin mass, but the moulds had stems and were fixed in a carrier so that a number could be dipped at the same time. The moulds were first oiled to prevent the gelatin adhering, and when set the capsules were slipped off and trimmed for filling.

A similar description of capsule preparation appears in the 3rd Edition (1857) of Theophilus Redwood's Supplement to the Pharmacopoeia, but he speaks of the capsules being withdrawn from the mould by a dexterous application of the fingers and then dried in the air. Redwood gives further details of the filling of the capsules with liquids by means of a syringe having a very fine nozzle and the sealing of the mouths of the capsules with a drop of solution of gelatin applied with a small camelhair pencil and then further sealed by dipping the mouth of the capsule into the gelatin solution.

The description of capsule preparation in the 1907 and later editions of the B.P.C. follows along similar lines, but with the added instruction that after the capsules are withdrawn from the moulds they are then trimmed so as to leave a short length of neck.

As will be seen later, many soft capsules are today still prepared commercially by this method.

The invention of hard gelatin capsules is attributed to James Murdoch of London, who was granted a patent in 1848 entitled, "An Invention for Preserving Medicines, etc., in Solid, Liquid or Powdered Form Protected from the Air." It was further stated that the capsule consisted of two parts which fitted together, one part forming the case to hold the substance to be preserved, and the other the cover which fitted tightly over the case and was sealed by simply moistening the edge of the capsule. It was further stated that the most suitable form for the capsule was a cylinder with hemispherical ends, and details were given for the preparation of the capsules by dipping metallic rods into a solution of gelatin.

Capsule Preparation in the Pharmacy

Hard gelatin capsules are used for powders and still find occasional application in the pharmacy. I know of no source of empty soft gelatin capsules for pharmaceutical use, but small moulds for making these empty capsules are still referred to in the literature. It is doubtful if any pharmacist today has either the time or inclination to make his own soft capsules. This

presents but another example of the modern trend of manufacture where mass production is carried out mechanically in machines of increasing complexity. The Honours Degree in Pharmacy at London University now includes the subject of Pharmaceutical Engineering, indicating the development of machinery employed in pharmaceutical manufacture today.

Commercial Encapsulation

Hard Capsules: Hard gelatin capsules are much more popular in the U.S.A. than they are in Great Britain, probably because the manufacturers of these capsules—Eli Lilly & Co., Parke, Davis & Co.—are located there and developed this business commercially. It has been stated that the production of hard gelatin capsules in U.S.A. exceeds 7 billion capsules per annum.

It is not intended to go into lengthy details on the manufacture of the hard capsules themselves, but it is interesting to note that these capsules are supplied with the tops fitted over the bottoms. The manufacturing process is fully automatic from the stage where the steel formers are dipped into the gelatin, the two parts forming the tops and bottoms of the capsules dried mechanically, trimmed and fitted together in a continuous operation. The manufacture calls for rigid control throughout in air-conditioned rooms. One unit can produce around a million capsules per 24-hour day, depending on the size of the capsule. Great care is needed in the control of the viscosity of the gelatin solution, since the viscosity determines the wall thickness of the capsule. The two most critical dimensions of the capsule are the inside diameter of the cap and the outside diameter of the bottom at the open end; tolerances here are kept within the limits of plus or minus one-half-thousandth part of an inch. This rigid control is necessary so that a snug fit of cap and body results.

The filling of the hard capsules on a commercial basis is performed on semi-automatic machines, and I am indebted to Messrs. Parke, Davis & Co. of Sydney for the photographs from which slides were prepared. The first slide shows the machine used for the filling of the capsules. Empty capsules are fitted into a magazine and orientated mechanically so that the bottoms point downwards. The capsules are then ready to be fed into a double circular plate with holes to take the capsules. By means of vacuum the capsules are drawn into these holes as the plate revolves under the hopper. When the plate is full of capsules, the top portion holding the covers is placed on one side and the plate containing the bottoms placed on another table top which rotates the plate under the feeder hopper. A rotating worm drive impels the powder to the mouth of the hopper, and the amount of powder entering each capsule as the capsules rotate beneath the hopper is carefully and accurately adjusted. The amount of fill can be controlled within the variation of plus or minus 3%.

When all the capsule bottoms have been filled, the top plate is placed over the bottom one and the capsules closed in an hydraulic ram. By this means the filled bottoms of the capsules are pushed into the capsule heads. The plates are then separated and the filled capsules collected and freed from dust by special polishing equipment. At this stage the capsules are not hermetically sealed, and many capsules appear on the market in this form. It is fairly simple in this form to separate the two parts of the capsule. In hand-filling, however, the tops of the capsules are sometimes dampened with a moist pad so that the gelatin softens and on drying out the two parts adhere fairly tightly.

However, in the Kapssealing process, as used by Parke, Davis with their Kapsseals, the capsules pass to a Weir capsulizing unit where a band of gelatin is applied to the join of the tops and bottoms of the capsules. This is usually applied in a different colour to the body of the capsule. The banded capsules are then dried, sorted and inspected for irregularities.

The hard capsules are popular for several reasons; the equipment necessary to fill them is not excessively elaborate, and comparatively small pharmaceutical houses can use it. Further, expensive air-conditioning equipment is not required, and it is economically practical for manufacturers to produce small batches of capsules. In the fully automatic soft gelatin capsule machines much larger runs are necessary.

Soft Capsules: A very crude and simple machine for preparing soft capsules consists of two plates with circular or elliptical cavities having sharp raised edges. A sheet of gelatin is placed on the bottom plate, warmed slightly to soften the gelatin, and a layer of the liquid medicament is poured over the gelatin sufficient to give the required amount in all cavities. A second sheet of gelatin is then carefully placed over the layer of liquid medicament and the top plate carefully placed in position, pressed down gradually and finally pressed in an hydraulic press. Gelatin and liquid are thus forced into the upper and lower cavities during the process. The raised edges of the plates cut and seal the two parts of the capsule. The method is not particularly accurate and is not recommended where a high degree of accuracy of dosage is required. I have seen capsules made overseas by this method where the variation from capsule to capsule was as high as 30%.

The second type of machine is a mechanical development of the dip process referred to under "Historical Use of Capsules." Metallic moulds are dipped several times into a gelatin solution, and the capsules when set are slipped off the moulds, trimmed, filled with a measured volume of liquid, sealed with gelatin solution and dried. Such units are used for liquid filled capsules. Quite a high degree of mechanisation is achieved, and units of this nature are in operation in Australia.

The main development of fully mechanised soft gelatin encapsulation took place in America.

The Colton Vacumatic machine consists of two units—the gelatin-making machine and the capsule press. In the former unit, the gelatin solution is spread from a hopper on to a cooled casting drum, the sheet of gelatin stripped from the drum by a second roller and cut into lengths ready for use.

The capsule press consists of a number of lower plate moulds on which the gelatin sheet is placed and sucked into position by vacuum. The medicament is then measured into the depressions by a series of pumps, a second sheet of gelatin placed over the mould, and the upper mould brought into position and the two parts pressed together. The capsules are thus formed and ejected into a trough for washing. They are then subsequently dried under controlled humidity conditions. Capsules so prepared usually show a horizontal seam, but the degree of accuracy of fill is quite high and claimed to be of the order of plus or minus 2%. Quite a number of these units are in operation in the U.S.A.

In 1933, a fundamentally new process for soft gelatin capsules was developed by R. P. Scherer. This is a completely automatic unit which puts a gelatin shell around an accurately measured portion of liquid or paste. Two continuous ribbons of gelatin pass over a pair of similarly constructed rotating die rolls; a wedge with an orifice in its knife edge comes between the dies as they rotate, and an accurately measured quantity of liquid is forced through the orifice and between the two ribbons of heated gelatin by a precision-gauged metering pump. The force of the injection stretches the gelatin into the mould cavity, thus forming the capsule. The rotating dies meet and seal the two pieces of the capsule.

It is stated that the Scherer Corporation of Detroit produces a billion capsules annually. This company processes material for the majority of the pharmaceutical organisations throughout America. Similar plants are in operation in Great Britain and on the Continent. The complexity of the equipment requires large runs, and it is evidence of the efficiency of these

units that such a large portion of soft encapsulation is still performed by this company for a great number of the pharmaceutical companies of America.

In 1948, Dr. Stirn, Director of the New Products Development Laboratory of the Lederle organisation, after some seven years of intensive research, finally developed the Lederle ACCOGEL machine. These machines are probably the only ones in the world which will fill a powder between two films of gelatin to form a one-piece sealed capsule. The machine will also fill liquids or pastes. In this respect, it differs from other encapsulating machines, hard-shell units operating on powders only, while the soft capsule units are used on liquids.

Description of the Accogel Machine

A brief description of the Accogel encapsulating equipment which we are now operating in Sydney is, I think, of more than general interest, and will show the very narrow limits which exist between successful operation and failure. The process can perhaps best be described by steps.

Preparation of Powder Blend for Encapsulation: The medicaments, together with other ingredients, such as diluents and binding agents (to assist in forming a compact powder plug), are blended in a ball mill and ground through a Fitzpatrick comminuter for uniformity of particle size and powder density. The careful control of particle size and powder density is essential.

Preparation of the Gelatin Solution: The gelatin mixture consists of gelatin, glycerin and water, together with pigments for rendering the shell opaque, permitted dyes and preservatives. This is prepared in a separate room, using specially selected gelatin. The removal of air bubbles from the gelatin mass is carried out under carefully controlled conditions of temperature and pressure. The mixture is then held at a pre-determined temperature until encapsulation starts.

Operation of the Accogel Machine: The gelatin solution is pumped to the gelatin hopper shown on the machine, and two films are formed with a thickness of approximately 28/1000ths of an inch, controlled accurately to 1/1000th of an inch. This is a particularly delicate operation and requires precise control. The gelatin films pass over a cooled casting drum causing the gelatin to set to a tack-free flexible film. The lower film passes through a coating roller where a film of edible resin is deposited. This film then passes over the cavities of the die roll running clockwise. The film is drawn into the cavities by vacuum and then passes immediately beneath the measuring roll. The measuring roll, operating in a counter-clockwise direction, passes under the powder hopper and picks up a measured amount of medicament (by vacuum) which is deposited (by compressed air) in the lower cavities of the die roll. The amount of powder delivered as a powder plug from the measuring roll is determined by the size of the cavity, the density of the powder and the amount of vacuum applied in its formation, and, again, extreme care is necessary to obtain uniformity.

The second gelatin film has, in the meantime, passed over a series of rollers and the under-side coated with edible resin. This upper film is then deposited on the lower film, and the two films pass through the die and sealing rolls, during which operation the capsules are sealed by heat and pressure. They are printed in this soft state, cut and ejected from the gelatin web, and blown by air into a rotating pan so that the soft capsules will not stick together.

The room in which this Accogel machine works is carefully controlled by air conditioning, and so sensitive is the adjustment that even the presence of eight or nine people in the room at one time can upset the conditions and cause trouble with the gelatin films.

In the case of liquid filled capsules, the measuring rolls are replaced by a series of needles which deliver a pre-measured amount of liquid into each capsule cavity.

The capacity of the unit is from 20,000 to 50,000 capsules per hour, depending on the size.

Drying of the Capsules: The capsules are then dried on stainless steel trays under specially controlled temperature and humidity conditions.

Drying must be stopped before the capsules become too hard and brittle, liquid capsules drying more quickly than capsules containing powder. The moisture content of the capsules must be determined rapidly from time to time. This is done by means of a Steinlite moisture tester which operates by measuring the dielectric constant, and the moisture content is empirically determined in the matter of a few minutes.

Washing and Polishing: After drying, the capsules are transferred to a washing and coating area. Washing is carried out by means of solvents (or a mixture of solvents) such as Petroleum Ether, Alcohol and Carbon Tetrachloride, so adjusted that any capsules under the pre-determined weight float on the surface of the liquid and are thus easily rejected.

After washing, the capsules are coated with a very thin layer of gum benzoin and then spun dry. This imparts a polish to the finished capsules and renders them, to some extent, moisture resistant.

Inspection and Packing: From here the capsules are transferred to the inspection belt, where every capsule is visually inspected. The capsules are then filled into bottles by an electronic counter which ensures accuracy of count.

It is pleasing that in Australia we now have one of these Accogel machines which encapsulates powders, liquids or pastes with such a high degree of accuracy.

Conclusion

In conclusion, mention might be made of the advantages presented by the use of capsules:

The shape of the capsules can be varied so that they are easily swallowed.

It is comparatively simple to impart a pleasing flavour to the capsule itself without incorporating this throughout the medicament.

Colouring of the shell is easily carried out and results in a uniform appearance, while, with uncoated tablets, it is necessary to incorporate the desired colour throughout the mass.

Soft, flexible capsules and band-sealed capsules are tamperproof and, at the same time, the medicament is protected in an hermetically sealed shell, thus increasing the stability of many drugs.

The encapsulation of powders in flexible capsules avoids the use of oily suspending agents and often results in a more easily digestible product; for example, a dry synthetic Vitamin A powder may be used instead of the oily Vitamin A with its attendant odour and taste.

Capsules can easily be treated with formalin or cetostearyl alcohol and shellac in acetone to ensure the passage of the capsule through the stomach into the intestines.

The further development of the coating of the gelatin shell presents great possibilities in controlling the time of absorption of the medicament; indeed, capsules are now on the market which contain a mixture of medicaments, with a portion of the medicament in pre-coated granules so that the action of the drug is extended over a longer period.

Encapsulation thus opens up a wide field of research for the improved presentation of drugs so far as appearance, palatability, ease of administration and prolonged activity are concerned.

Acknowledgment

In conclusion I wish to thank Parke, Davis & Company Ltd. of Sydney for details of their encapsulation unit, Andrex Pty. Ltd. for a range of soft gelatin capsules, and those of my colleagues who have assisted with the subject matter of this paper.

Melbourne, August, 1958.

STERILISATION BY CHEMICAL AGENTS

By M. Heuzenroeder and K. D. Johnson

Part I

Techniques

The use of miscellaneous chemicals

Introduction

A study is being undertaken to find a germicide or combination of germicides which will effect sterilisation in the shortest time possible without the application of heat.

It is known that agents such as ethylene oxide (6) (13), gaseous formaldehyde (1) (4) and formaldehyde solutions (8) (12) have been advocated. These will be included in the following classes of germicides being studied:

1. Miscellaneous chemicals.
2. Phenols.
3. Alcohols.
4. Quaternary Ammonium Compounds.
5. Acids and Alkalies.
6. Halogens.
7. Heavy metals.
8. Essential Oils.

Most chemical germicides are ineffective against bacterial spores, (3) (9), but certain combinations may show additive or synergistic action, and this will be considered.

The first tests have been made with bacterial spores. Germicides which are effective against spores will also be tested against certain vegetative organisms and fungi.

This report outlines the techniques for testing adopted after initial experiments, and the selection of suitable organisms. Particular attention is drawn to the problem of bacteriostasis. The results obtained with several agents within the above groups are presented.

Experimental

1. Method of Test

This is based on the "Use Dilution Test" adopted by the Association of Official Agricultural Chemists (10).

Stainless steel cylinders are contaminated with the test organism, dried, and exposed to the germicide. After the required exposure time, the cylinders are cultured to detect any remaining viable organisms.

Technique:

(a) **Cylinders:** These were soaked in N/1 NaOH, rinsed until no reaction with phenolphthalein, then sterilised by autoclaving in an 0.1% solution of asparagine for 20 minutes at 15 lb./sq. in.

(b) **Culture:** The aerobic test organisms were washed from nutrient agar slopes with a few mls of distilled water on to nutrient agar roux bottles. These were incubated at 30°C for 3 days. The growth was removed with distilled water and washed twice in distilled water.

The anaerobic organism was grown in cooked meat medium. The spores were washed in distilled water as above.

A small portion of the bulk spore suspensions was heated at 650°C for 30 minutes and the number of viable spores counted. In the actual tests, dilute spore suspensions which had not been heated were used, since heated spores may have lowered resistance to chemicals (7).

(c) **Preparation of Contaminated Cylinders:** Cylinders were immersed for 15 minutes in a spore suspension containing 10⁶ spores per ml. The cylinders were removed with a nichrome wire hook to sterile petri dishes matted with filter paper, and dried at 37°C. Initially, cylinders were immersed in an aqueous spore suspension and dried for one hour. Some preliminary tests indicated that these were more sensitive to germicidal action than cylinders soaked

in a serum suspension and dried for 24 hours. This latter method was then adopted as the standard procedure.

(d) **Test for Germicidal Action:** 10 ml. amounts of germicide were pipetted into sterile McCartney bottles. Contaminated cylinders were placed in the germicide and left at room temperature (21°C). One cylinder was removed at each required time interval, drained, and placed in thioglycollate broth. After 15 minutes, the cylinders were removed to a second culture broth of serum thioglycollate. The need for this second culture, and the use of serum in overcoming bacteriostasis, has been referred to elsewhere (2) (11), and was confirmed in the work. Results were read after incubation at 30°C (37°C for *Cl. tetani*) for one week. Where necessary, turbidity was checked by smearing.

(e) **Media used:**

Nutrient Agar

Beef Extract (Lab. Lemco)	5 G.
Peptone (Parke, Davis)	10 G.
Sodium Chloride	5 G.
Agar	20 G.
Distilled Water to	1000 mls.
	pH 6.8.

Thioglycollate Broth

Beef Extract (Lab. Lemco)	10 G.
Peptone (Parke, Davis)	10 G.
Yeast Extract (Difco)	5 G.
Dextrose	5 G.
Sodium Chloride	2.5 G.
Agar	0.5 G.
Sodium Thioglycollate	1.0 G.
Distilled Water to	1000 mls.
	pH 7.0.

Serum Thioglycollate Broth

Sterile horse serum, 10%, added to Thioglycollate Broth after sterilisation.

Cooked Meat Medium

Cooked minced bullock's heart in a broth of the following composition:

Beef Extract (Lab. Lemco)	10 G.
Peptone (Parke, Davis)	10 G.
Sodium Chloride	5 G.
Distilled Water to	1000 mls.

pH 7.5.

2. Test Organisms

The spores of aerobic and anaerobic sporing rods were used. Their suitability for testing against germicidal agents was measured by determining their resistance to destruction by acid.

Spores suspended on surgical silk were exposed to 20% w/w HCl at room temperature. Resistance to this acid for five minutes indicates that spores are suitable for sporicide tests (5).

Three spore suspensions were chosen:

Cl. tetani NCTC 9567 resisted acid for 5 minutes.
B. cereus NRRL B569 resisted acid for 30 minutes.

B. cereus NCTC 8035 resisted acid for 30 minutes.

These spores were destroyed by boiling in water for five minutes, but resistance to heat is not necessarily a measure of resistance to chemical action.

A search for other organisms which are resistant to chemicals is continuing, and these will be tested when available.

3. Germicides used.

Preliminary work has covered a large range of phenolic substances and some commonly used agents.

A selection of these, either alone or in combination, has been used in this series of tests, as follows:—

(a) Four miscellaneous chemicals:

Chlorhexidine
Formaldehyde
Potassium permanganate
Hydrogen peroxide.

(b) Four phenols:

Hexachlorophene
Benzyl cresol
Octyl cresol
Dichlor-m-xylenol.

The solutions were made in water, where possible, and in 70% ethyl alcohol and isopropyl alcohol.

Agents which were compatible were combined and dissolved in suitable solvents. A number of combinations could not be tested because of insolubility or incompatibility.

The strengths of the solutions depended on the solubility of the agents, and had regard for practical application.

The pH of most solutions ranged from 3.0 to 4.5. The potassium permanganate solutions were acidified for greater activity (7) and pH was approximately 1.

The four phenols were tested alone in two tests, but because of their ineffectiveness were omitted from the two later tests.

Results and Discussion

The results of testing this selection of chemicals in aqueous and alcoholic solution are shown in Tables I to IV.

Table I records an experiment using cylinders immersed in an aqueous suspension of spores and dried for one hour before use. Table II is a test with the same organism but using cylinders immersed in a serum suspension of spores and dried for 24 hours before use. There is no significant difference between the results, although preliminary work had indicated otherwise.

Where tested, the phenols (selected as the best of a large range previously checked against more sensitive organisms), hexachlorophene, chlorhexidine, alcohol 70%, and isopropyl alcohol, have all proved ineffective against the spores of *B. cereus*, B 569 and 8035, for periods up to 24 hours.

Solutions of formaldehyde, acidified potassium permanganate, and hydrogen peroxide have effected sterilisation in all tests in less than 24 hours, and in some cases in less than one hour.

Contrary to a previous report (9), formaldehyde in aqueous solution has proved superior to a solution in ethyl alcohol. However, formaldehyde in isopropyl alcohol is the same as, or better than, the aqueous solution. Some of the other germicides used also appear to be more effective in isopropyl alcohol than in ethyl alcohol.

The combination of formaldehyde with hexachlorophene shows promise as an efficient sterilising agent. It is superior to either constituent alone. It is also more effective than the mixtures of formaldehyde with other phenols (except in Table III). Hydrogen peroxide 30 vols. and acidified potassium permanganate are the only other agents tested which are comparable.

Of the organisms tested, the spores of *B. cereus* NCTC 8035 appear to be the more resistant (see Table III). The spores of *Cl. tetani* NCTC 9567 are more sensitive. These results can therefore be correlated.

with the "acid resistance test" used for selecting the organisms.

The superior activity of the two oxidising agents (hydrogen peroxide and potassium permanganate) and the reducing agent (formaldehyde) suggests that further consideration might be given to oxidising and reducing agents as a class of germicides.

Table I

Test Organism: *Bacillus cereus* NRRL B 569.
Cylinders immersed in suspension of spores in distilled water, 10⁶ per ml., and dried at 37°C for one hour.

Hours	Water				Ethyl alcohol 70%				Isopropyl alcohol			
	1/4	1	24	1/4	1	24	1/4	1	24	1/4	1	24
Alcohol Controls												
Chlorhexidine 1%	+	+	+	+	+	+	+	+	+	+	+	+
Chlorhexidine 1% + hexachlorophene 1%												
Formaldehyde 10% + hexachlorophene 5%												
Formaldehyde 10% + benzyl cresol 5%												
Formaldehyde 10% + octyl cresol 5%												
Formaldehyde 10% + dichlor-m-xylenol 5%												
Potassium Permanganate 1% (acidified)	+	+	-									
Potassium Permanganate 5% (acidified)	+	-	-									
Hydrogen Peroxide 10 vols	+	+	-									
Hydrogen Peroxide 30 vols	-	-	-									
Hexachlorophene 5%												
Benzyl cresol 5%												
Octyl cresol 5%												
Dichlor-m-xylenol 5%												

+= growth within 7 days at 30°C.

--= no growth within 7 days at 30°C.

Table II

Test Organism: *Bacillus cereus* NRRL B 569.
Cylinders immersed in suspension of spores in serum, 10⁶ per ml., and dried at 37°C for 24 hours.

Hours	Water				Ethyl alcohol 70%				Isopropyl alcohol						
	1/4	1	2	3	24	1/4	1	2	3	24	1/4	1	2	3	24
Alcohol Controls															
Chlorhexidine 1%	++	++	-			++	++	++	++	++	++	++	++	++	++
Chlorhexidine 1% + hexachlorophene 1%															
Formaldehyde 10% + hexachlorophene 5%															
Formaldehyde 10% + benzyl cresol 5%															
Formaldehyde 10% + octyl cresol 5%															
Formaldehyde 10% + dichlor-m-xylenol 5%															
Potassium Permanganate 1% (acidified)	-	-	-	-	-										
Potassium Permanganate 5% (acidified)	-	-	-	-	-										
Hydrogen Peroxide 10 vols	++	++	-			++	++	++	++	++	++	++	++	++	++
Hydrogen Peroxide 30 vols	-	-	-												
Hexachlorophene 5%															
Benzyl Cresol 5%															
Octyl Cresol 5%															
Dichlor-m-xylenol 5%															

+= growth within 7 days at 30°C.

--= no growth within 7 days at 30°C.

Table III

Test Organism: *Bacillus cereus* NCTC 8035.
Cylinders immersed in suspension of spores in serum, 10⁶ per ml., and dried at 37°C for 24 hours.

Hours	Water				Ethyl alcohol 70%				Isopropyl alcohol						
	1/4	1	2	3	24	1/4	1	2	3	24	1/4	1	2	3	24
Alcohol Controls															
Chlorhexidine 1%	++	++	++	++	++	++	++	++	++	++	++	++	++	++	++
Chlorhexidine 1% + hexachlorophene 1%															
Formaldehyde 10% + hexachlorophene 5%															
Formaldehyde 10% + benzyl cresol 5%															
Formaldehyde 10% + octyl cresol 5%															
Formaldehyde 10% + dichlor-m-xylenol 5%															
Potassium Permanganate 1% (acidified)															
Potassium Permanganate 5% (acidified)															
Hydrogen Peroxide 10 vols	++	++	-			++	++	++	++	++	++	++	++	++	++
Hydrogen Peroxide 30 vols	-	-	-												

+= growth within 7 days at 30°C.
--= no growth within 7 days at 30°C.

Table IV

Test Organism: *Clostridium tetani* NCTC 9567.
Cylinders immersed in suspension of spores in serum, 10⁶ per ml., and dried at 37°C for 24 hours.

Hours	Water				Ethyl alcohol 70%				Isopropyl alcohol			
	1/4	1	24	1/4	1	24	1/4	1	24	1/4	1	24
Alcohol Controls												
Chlorhexidine 1%	+	+	-		+	+	+	+	+	+	+	+
Chlorhexidine 1% + hexachlorophene 1%												
Formaldehyde 10% + hexachlorophene 5%												
Formaldehyde 10% + benzyl cresol 5%												
Formaldehyde 10% + octyl cresol 5%												
Formaldehyde 10% + dichlor-m-xylenol 5%												
Potassium Permanganate 1% (acidified)	-	-	-	-	-	-	-	-	-	-	-	-
Potassium Permanganate 5% (acidified)	-	-	-	-	-	-	-	-	-	-	-	-
Hydrogen Peroxide 10 vols	-	-	-	-	-	-	-	-	-	-	-	-
Hydrogen Peroxide 30 vols	-	-	-	-	-	-	-	-	-	-	-	-

The Problem of Bacteriostasis

In work of this nature it is essential that bacteriostasis and bactericidal action be clearly distinguished.

In the tests done it was invariably found that where growth appeared in the serum thioglycollate broth (second culture), it failed to appear in the first culture broth.

A separate experiment was performed to determine the dilution of germicides which did not inhibit the growth of the test organisms. Those germicides which showed effective sterilisation (Tables I to IV) were checked.

Method

Two series were set up by serially diluting the germicides by ten times in thioglycollate broth, and in serum thioglycollate broth. Contaminated cylinders (aqueous suspension of sports *B. cereus* NRRL B569, dried for one hour) were added to each dilution, and

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incubated for seven days at 30°C. The least dilution of germicide which permitted growth was the end point, and is the dilution which must be achieved to ensure absence of bacteriostasis.

Results and Discussion

The significance of adding 10% serum to the thioglycollate broth is clearly shown in the tabulated results:

Table V
Test organism: *B. cereus* NRRL B569.

	Thioglycollate broth dilution	
	No serum	Serum added
Formaldehyde 10% in water	10 ⁻⁶	10 ⁻⁴
Formaldehyde 10% + hexachlorophene 5% in ethyl alcohol	>10 ⁻¹²	10 ⁻⁴
Formaldehyde 10% + hexachlorophene 5% in isopropyl alcohol	10 ⁻⁹	10 ⁻⁴
Potassium permanganate 5%	10 ⁻²	10 ⁻¹
Hydrogen peroxide 30 vols in water	10 ⁻⁴	10 ⁻²
Hydrogen peroxide 30 vols in ethyl alcohol	10 ⁻⁴	10 ⁻²
Hydrogen peroxide 30 vols in isopropyl alcohol	10 ⁻⁴	10 ⁻¹

It is therefore necessary for any germicide carried into the serum culture broth with the test cylinders to be diluted at least 10⁻⁴ to avoid bacteriostasis.

A separate measurement showed that the carry-over with cylinders from the test solutions of germicide to the first culture broth effected a dilution of approximately 10⁻³, and when taken to the second culture broth, a dilution of approximately 10⁻⁶.

It is therefore unlikely that bacteriostasis exists in the results presented in Tables I to IV.

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DEVELOPMENT IN HOSPITAL PHARMACY

By A. E. Footitt, F.P.S. (London), D.B.A.
Chief Pharmacist, Royal Perth Hospital

In accepting this invitation to speak to some of my colleagues on this subject, I do so with considerable misgiving, for my audience is almost entirely unknown to me. I have lived in Australia for just 12 months, and I am quite unfamiliar with the special conditions and problems in what are known in Perth as "The Eastern States." However, it may be that as a "newcomer" I can compare and contrast conditions which may have become commonplace to you and so taken for granted; at best I can give some indication of the developments in hospital pharmacy in the U.K. together with my impressions on conditions in W.A. It is probably in the sphere of hospital pharmacy that the problems and duties are most closely similar the world over. Developments in hospital pharmacy have largely depended upon the enthusiasm of individuals or the adoption of progressive policies of administration with individual hospitals. Wide variations in policy and practice are found which may depend upon the size of the hospital, whereas the benefits derived from association with a medical school are often a more enlightened view of departmental freedom and responsibility. Development in a particular hospital may be rendered almost impossible by physical limitations, while in others tradition may have produced circumstances which the pharmaceutical staff cannot overcome. I have always found that a Governing Body of responsible people will seriously consider a situation which is well put before them. I propose to deal with my review of possible developments under the following heads:—

- The training of the Hospital Pharmacist.
- The service which the Hospital Pharmacist should be performing in his hospital.
- The construction of Pharmaceutical departments.
- The formation of an effective Association of Hospital Pharmacists.

A.1. I have been surprised to learn that in at least two States the embryo pharmacist cannot serve his apprenticeship in a hospital. Economic considerations have had some bearing upon this situation, but it is unfair to the student who aspires to the hospital field that some period of his training cannot be obtained in his future sphere of work. Alterations in the State Pharmacy Acts can be best pressed forward by the demands of the Student Associations and by Hospital Pharmacists' Associations, and perhaps by the hospital authorities themselves. Some safeguard such as approval of the hospital for training could be enforced. Apprentices should be counted as supernumerary to the department, otherwise they may be regarded as a source

of cheap labour. The time is approaching when a decision to separate the college course from practical training must be faced; at the same time facilities to take a degree in Pharmacy could be provided by the Universities. Comparison with the requirements overseas should be noted, but while they may be regarded as progressive in their respective countries, much will depend upon local requirements as to whether such changes should be applied here. I assume that in a rapidly-developing under-populated country such as Australia there is always the opening for a new retail pharmacy, and therefore the college course has been planned to educate students who will satisfactorily take their place in retail pharmacy. We should not lose sight of the fact that "the pharmacist engaged in hospital practice holds a most strategic and important position in the field of professional practice." (1) An interesting development in the training of the American hospital pharmacist has taken place over the past ten years whereby a graduate can receive his practical training in an approved hospital as an intern. An undoubted advantage of the degree course is the association with others in an environment where recognised professional degrees are a mark of prestige. With the establishment of degree courses the hospital could offer post-graduate training with the opportunity for research.

B. The scope of Hospital Pharmacy was indicated in a Report on Hospital Pharmaceutical Service (1) published by the Ministry of Health in Great Britain in 1955. For the purpose of this paper I shall only refer to those functions which I feel require special attention in this State. You will know, better than I do, to what extent they apply in your respective hospitals.

1. The pharmacy should be responsible for the provision, nature and quality of drugs, medicinal preparations, etc. At the commencement of the National Health Service in Great Britain a new class of executive officer, termed a Supplies Officer, was established in most hospital Groups, and I am well able to appreciate after ten years the differences of opinion that developed and to some extent still exist about the role of the pharmaceutical department in obtaining supplies. I find that in addition to a hospital purchasing officer that State purchasing bodies are used to a greater or lesser extent in Australia. Such bodies can provide an essential service to the widely scattered country hospitals, many of which cannot call upon the services of a local pharmacist. At the same time they should not be allowed to usurp the essential function of the pharmacist; while greater confidence could be felt in them if pharmaceutical advice or control was available at all levels. I have been informed by two States that drug purchases are made against the lowest quotations, but we know from practical experience that this may be a false economy. The principle must be established that the selection of drugs—by direct order with the supplier if urgent—in what quantities, sizes, and from what sources, is a function of the chief pharmacist, so that he may assure his governing body, medical staff and patients that the supply is in accordance with the prescriber's and pharmacopoeal requirements. I suggest that this matter is one which could be usefully discussed by Hospital Pharmacists' Associations.

2. The Pharmacist should ensure that during storage in the hospital drugs maintain their potency and quality. Outside of his own department the pharmacist cannot perform this duty without a regular inspection of the Wards and Department. Under the Poisons Rules in Great Britain this is required to be done once a quarter. I have initiated this at the Royal Perth Hospital, with the ready co-operation of the Matron, and it has provided a means of introduction to the Ward Sisters, and will, I hope, foster those good relations between the Wards and the Pharmaceutical Department which are so essential for smooth working.

3. The collection of technical and medical literature on drugs in a way which is readily available to the

medical staff is a service which the hospital pharmacist should make available and which will bring him into closer association with his medical staff who soon come to value the pharmacy as a source of information. In the larger hospitals it is not unusual for the pharmacist to edit a quarterly News Sheet detailing new drugs which have been introduced into the hospital, noting changes in any administrative requirements, for example those made under the Pharmaceutical Benefits list, comparison of costs of certain proprietary drugs with their pharmacopoeal equivalents, etc.

4. Where the hospital is associated with a medical school there are special duties which usually fall to the lot of the pharmacist. Drugs are frequently used for clinical trials before being placed on the market, and different formulations for a variety of purposes may be required. The versatility of the pharmaceutical department depends upon the availability of apparatus and equipment such as tablet machine, emulsifier, ampouling equipment, ointment mill, etc. Close co-operation should exist between the department of Pharmacology when the pharmacist has the duty of instructing medical students in the elements of pharmacy. Frequent reference is made in England to the need for the medical student to be acquainted with the cost of the treatment for which he may be responsible. With the mounting costs of the Service such a suggestion has some foundation. At least manufacturers have been forced to indicate on their advertising matter the costs of their products to the State, which is, I find, something unusual for them to do here. Increasing emphasis is being placed on research in hospital pharmacy. In this connection it is interesting to note that the Report referred to above drew attention to the desirability of providing the time and equipment necessary for the pharmacist "to undertake investigation and inquiries into matters which are of profit and interest to the hospital service generally."

C. It is only within very recent years that some attempt has been made to utilise or adapt the newer constructional materials when planning a pharmaceutical department.

The building of completely new hospitals which has been taking place in Australia offers excellent scope in the planning of pharmaceutical departments. The responsibility is considerable and stimulating, but the planner here may feel limited in his experience of similar departments and by the materials and equipment available. I now realise how well this could apply in this State, for however helpful and resourceful the local architect or supplier may be, I have found that information is just not available, and can only be obtained indirectly through agents or from the "Eastern States." It is in such cases that the value of research work which has been conducted into the planning of Pharmacy departments in other countries should be made available. In 1955 a committee was set up by the Guild of Public Pharmacists in England to co-ordinate pharmaceutical research in planning while earlier information is available from the American Society of Hospital Pharmacists (2). During my short period in, W.A. I have noticed a desire which was less evident in England, that in spite of dollar restrictions, hospital authorities will obtain the most suitable apparatus for the job, whether it be English, American, German, etc. There is not time to elaborate, but a few trends may be noted, viz.: The old English method of storing by rows of drugs in "shop-rounds" upon open shelving is being replaced by closed cupboards either in part or entirely (St. James's Hospital, London) or by the "Swartz" cabinets of American pharmacies. In the larger hospitals pre-packing of Ward Stock drugs by unqualified labour on a semi-commercial scale and using filling equipment is taking the place of extemporaneous dispensing. The extent to which expensive new apparatus should be purchased for manufacturing in the department must be determined

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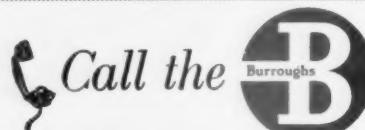
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in relation to the needs of the particular hospital, and obviously it becomes more economical if the needs and resources of a number of hospitals are combined. This applies particularly in the preparation of large quantities of injection solutions which are bulky and require the costly transport of much water. It might be of interest to note the somewhat unusual way in which this service has been resolved in my own hospital. Under a joint-user arrangement with the Red Cross Centre the preparation of injection solutions is now being undertaken in their new building by a pharmacist seconded from the hospital. Close proximity of the two buildings facilitates access while sterility and pyrogen controls are carried out in the hospital laboratories. I was interested to hear that Melbourne had adopted the ml. dose for hypodermics; this is something we might all do to promote uniformity for our nursing staffs.

D. Co-operation between members of a trade or profession is necessary for their preservation, protection, and in order to improve their status, whether it takes the form of a trade union or a voluntary organisation. Small numbers and great distances have in the past been against collaboration between hospital pharmacists in Australia. Both factors are, however, changing, and I believe the time is ripe for State Associations and a Federal Body, while financial help for travelling could be met in various ways. It appears that the main purpose of pharmaceutical representation at Commonwealth level is to watch the working of the Pharmaceutical Benefits Act. The responsibility of the State for many hospitals must bring with it frequent problems connected with drug control and organisation without any established means of obtaining advice. Hospital pharmacists' associations should be prepared to give this advice and to seek representation on any State Hospital body. It has been encouraging to find a desire of local hospital pharmacists to meet for discussion on a variety of subjects. It is hoped to evolve a more uniform system of issue, recording, storage, and labelling of Poisons, whereby the duties of the nursing staff might be clarified so that when moving from one hospital to another there would be similarity of systems.

Hospital Pharmacists should not work in isolation from their colleagues in general practice especially when their total numbers are so small. Every effort should be made as members of a common Society to understand each other's problems. In the wider sphere attendance at International Conferences has assumed a greater significance in recent years. It was always a great pleasure to have overseas pharmacists attending conferences in England, and they were offered every facility to obtain any information they might be seeking. The number of official delegates must necessarily be small on account of the time and cost of travelling, while reporting back must also present a problem in Australia. In addition to the exchange of views on scientific and technical matters, personal friendships are established and inspections made of hospital departments. I have purposely avoided referring to salaries paid to hospital pharmacists; firstly, because I believe that improvement in these can best come about by increased status of the pharmacist, and secondly, I find the representation of Pharmacy by Wages Boards, Salaried Officers' Associations, Civil Service, Federal or State, to be so complicated that I would not attempt to unravel it.

However, if staff are to be attracted and retained by hospitals it is surely something which must be examined by hospital pharmacists.

- (1) Report of the Sub-Committee on the Hospital Pharmaceutical Service. London, 1955.
- (2) Minimum Standards for Pharmacies in Hospitals, adopted by the division of Hospital Pharmacy of the American Pharmaceutical Association and the American Society of Hospital Pharmacists.

THE PHARMACEUTICAL CURRICULUM

By R. A. Anderson

At the present time and in the immediate past, widespread changes have taken place in pharmaceutical education in many countries. It is perhaps opportune to review some of these changes and to consider in what ways they should influence our thinking in revising pharmacy courses in this country.

Great Britain

The recent decision of The Pharmaceutical Society of Great Britain to increase the period of study for students proceeding to that Society's diploma (Ph.C.) is perhaps of major importance. The new regulations mean that Ph.C. students will now be required to have reached the same entrance standards as those proceeding to a degree and must then undertake a three-year full-time course. Whilst the exact details have not yet been published, the Chairman of the Society's Education Committee (Mr. C. W. Maplethorpe) when speaking at the 1957 British Pharmaceutical Conference indicated that in this three-year course approximately 480 hours would be devoted to pharmacology and physiology, 540 hours to pharmaceutical chemistry, 180 hours to pharmacognosy and 1000 hours to pharmaceutics. The 1000 hours devoted to pharmaceutics is about twice that previously available for teaching in this area and will include tuition in forensic pharmacy and in pharmacy administration (business methods).

The fact that the Society's diploma will require the same amount of time as the Bachelor of Pharmacy degree offers interesting and, perhaps, far-reaching possibilities, but these need not concern us now.

South Africa

South Africa also has recently introduced a three-year full-time course equivalent to a degree standard. This will be the subject of a separate paper this morning.

North America

In the United States, colleges of pharmacy accredited by the American Association of Colleges of Pharmacy have, since 1932, provided a four-year full-time academic course leading to a baccalaureate degree. This course is being increased by 1960 to a five-year full-time course. Some colleges have already instituted the longer course, others have indicated the changes they propose to make, and some are still considering what extensions and changes will be made.

In the main, these changes have been based on the recommendations made by Blauch and Webster in *The Pharmaceutical Curriculum* (American Council on Education, Washington, D.C., 1952).

Canadian colleges which have for some years given a three-year full-time course are also adding one year to their curriculum. These schools also award a degree.

Comparison with Australia

When Australian courses are compared with those of overseas schools, one is immediately impressed by the extra amount of time available in other countries, and automatically one thinks of differences in the training and education of the graduates.

Whilst there are certain outstanding differences, which will be detailed later, these are, in some cases, not so serious as the variations in course length would at first suggest. This is particularly noticeable when one compares the four- or five-year full-time course of many American colleges with the three- or four-year part-time courses in this country. There are several reasons for this.

During the first two years of study in American pharmacy schools, much time is devoted to English, Physics, Chemistry and Mathematics of about the standard given in Australian high schools. By our standards the American high school student is not fully extended. In some schools he is allowed and, in some cases, almost encouraged to spend considerable time

in, and receive credit for, non-exacting "life adjustment" courses.

In addition, there is considerable variation in standard from high school to high school. As a result, students enter the American colleges of pharmacy not so well prepared, and what seems to be equally important, not so uniformly prepared, as their Australian counterparts. The better students from the better American high schools are able to cope very easily with the first two years of the pharmacy course, and much of the work is repetition; at the same time many other students are unable to pass and are excluded. Provision of more advanced courses for the more adequately prepared first year students is made in a few cases, but this is the exception and not the rule.

In general, the pattern of relative slowness set by the high schools appears to be continued at tertiary level, at least during the early years, and it was my impression that it is only in the senior (final) year that the students work at an intensity comparable with that of British courses.

Comparison with overseas courses does, however, highlight areas of weakness in the Australian curricula. Without exception, Australian courses are markedly deficient in pharmacology, and in comparison with English courses deficient in the basic physical sciences. The revised American courses will also devote much more time to the liberal arts.

Practical Experience Requirements

Practical experience requirements of overseas students undertaking full-time academic courses are much less strict than those enforced in Australia, and in the main consist of about 2000 hours, served either after graduation or, in part or in whole, during summer vacations from the pharmacy school.

In general there seems to be little supervision and inadequate control over these requirements, and there is a growing feeling that they serve no useful purpose. As an extreme example, the Province of Manitoba in Canada has indicated that it will cease to require practical training as a pre-requisite for registration. On the other hand, in the American State of Wisconsin it is intended to supervise and control these requirements more adequately, and to this end the State Board of Pharmacy in Wisconsin will shortly appoint a Director of Education in an endeavour to add effectiveness to this phase of training.

It seems to me that on balance a concurrent internship (be it of two, three, or four years), provided it is adequately supervised and controlled, is definitely superior to the one year post-graduate internship obtaining in most English-speaking countries. But it must be recognised that such training is slow and in some ways inefficient.

There has been a trend over many years for the proportion of time which is spent in the pharmacy school each week to be increased at the expense of the amount of time spent in the pharmacy. Continuation of this trend would result in an arrangement which may be unacceptable to potential preceptors. This is clearly undesirable.

If more time must be spent in the school, and I will indicate later at least a few areas which need further expansion, an alternative approach should be investigated. Rather than reduce further the time spent in the pharmacy during each year of training, it seems more satisfactory to devote the first year of the course to a full-time academic programme and with no reduction in the amount of time spent in the pharmacy in the later years. In a four-year course, the subsequent three years of concurrent internship should provide adequate practical experience. The first year should then be devoted to the basic sciences and to an introductory pharmacy course, making possible a better sequential arrangement in the next three years.

Sequential Arrangement

One of the main advantages claimed for the extension

of American courses from four to five years is that a more appropriate subject sequence will be possible. It is claimed that this will lead to more efficient handling of material and consequently to a saving of time. It is considered important that the more basic sciences should be given before any of the applied sciences which depend upon them. Thus biology should be given before physiology, bacteriology and pharmacognosy; general chemistry should be given before pharmaceutical chemistry; physical chemistry should be given before pharmaceuticals; and bacteriology should be given before pharmaceutical microbiology.

Physiology and Pharmacology

It has already been mentioned that Australian pharmacy courses spend relatively little time in pharmacology and related subjects. The amount of time spent in this area in American pharmacy schools varies very much and is given under such titles as Biochemistry and Pharmacodynamics as well as Physiology and Pharmacology; but the average total time would be of the order of 200 to 300 hours. It is unreasonable to expect to find this amount of time in a part-time course, and virtually impossible to schedule anything approaching the 480 hours proposed for the English Ph.C. diploma.

This is the most important deficiency in Australian curricula, and even pruning other courses of obsolete material would not make available sufficient additional time to alleviate the position to any great extent.

In addition, an increasing number of American schools is giving a series of lectures on the Chemistry and Pharmacy of Organic Medicinals, which when integrated with material given in Pharmacology courses provides a realistic approach to modern practice in which prescription proprietaries occupy such an important place.

But here again the time element becomes important. At the Philadelphia College of Pharmacy and Science, for example, about 200 hours over a period of two years is devoted to this subject. In Adelaide a lecture course titled Organic Medicinals and occupying 28 hours has been given in the fourth year since 1956. Even after allowing for the fact that the American courses are much less intense, the discrepancy is great—it is too great.

Pharmacognosy

In the various centres there is considerable disparity in the times and the material covered in the study of Pharmacognosy. The 180 hours proposed for the English diploma is altogether too great for Australian needs and facilities. Courses approaching this duration are also given in a few American schools, but in the main much less time is devoted to this topic.

The "chemical arrangement" is used by practically all American pharmacognosy teachers, having replaced the morphological and taxonomic arrangements commonly used in Australian and English schools. This change has many advantages, but requires that students have previously studied Botany and Organic Chemistry, in order to have acquired the necessary background.

Little or no consideration, however, has been given to the integration of Pharmacognosy with galenical pharmacy. It seems to me that a combination of both of these systems might help to reduce the disinterest of the modern student in a field which has lost much of its past glory.

Some teachers of Pharmacognosy in other countries have endeavoured to stimulate interest by inclusion of material on hormones, biological products and vitamins, as well as on pesticides, allergens and antibiotics. Whilst this latter group seem to fall logically into the pharmacognosist's domain, treatment of hormones and vitamins can almost certainly be carried out more effectively in other courses.

Physical Pharmacy

An increasing number of American schools are including in their undergraduate curricula a subject titled "Physical Pharmacy." This is a course in which

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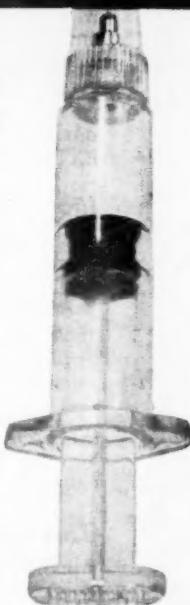
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physico-chemical principles are applied to the practice of pharmaceutics. Some of this material is being given in dispensing and pharmaceutics courses in other countries without being segregated and without a special title. However, the American practice does emphasise that **pharmaceutics can be taught as an applied science rather than as an art**, and to this extent might be copied by all of our teachers.

Another aspect of dispensing which receives special attention in the United States, and which is characteristic of their realistic approach to this problem, is the handling of prescription proprietaries. Liquid proprietary preparations are commonly included in exercises in extemporaneous dispensing, and special attention is directed to proprietary tablets, capsules and the various modifications of these dosage forms which are designed to prolong the therapeutic effect. Some schools utilise fully equipped "model pharmacies" which house a comprehensive range of proprietaries (including refrigerated biologicals) and in addition surgical sundries, sections devoted to baby needs, hypoallergenic cosmetics, and sometimes a limited range of "patent medicines."

In most of the others, one or two walls of the dispensing laboratory are fitted with sets of shelves or glass fronted cases in which are kept a reasonable to a comprehensive selection of prescription proprietaries. These are used in various ways, but a selection of them at least is included in the normal dispensing exercises.

In some schools they are singled out for special attention, and considerable time is devoted to receiving, interpreting and filling prescriptions for these items, which may be presented to students by telephone or by means of photostats of original prescriptions. In some cases also, these facilities are used in courses of Pharmacy Administration which include window dressing exercises, stock inventory, etc.

Pharmacy Administration

The increasing emphasis on accounting, marketing and management seems to be confined to the schools of Northern America. Whilst English pharmacists have been promised that some time will be found for such material in the new diploma course, we have no details as to the form that this will take. It seems to me that Australian pharmacy schools could well pay increased attention to this area, but we should realise that we need not spend so much time on this as our American colleagues for the following three reasons. Firstly, American courses are, almost without exception, given more slowly than ours, and there is no doubt in my mind that we can cover a comparable amount of material in less time; secondly, the marketing and business structure in this country is not nearly so complex as is the case in North America; and thirdly, American students spend less time in the pharmacy and so learn less of the actual conduct of a business at first hand.

Humanities

Throughout the world in all types of technological education time is being found for the inclusion of certain of the humanities. For example, much of the extra material included in American courses by virtue of the introduction of the five-year course will be devoted to the liberal arts.

The main problem so far as part-time courses are concerned is to find the extra time required, and the addition of more than one topic of this type (even though one is quite inadequate) is not practicable at the present time. Therefore the student should be permitted to choose from a wide list, a course from which he personally would derive the greatest benefit and enjoyment. Such a list might include philosophy, economics, geography, history, political science, psychology, sociology or musical form and appreciation.

I disagree with the concept that a student should be told "To be properly educated you must study one of the humanities. You will therefore study psychology." Obviously the provision of a wide list of electives might

introduce difficulties in some schools, but these are largely organisational and should not obscure what seems to be a reasonable goal.

Specialisation

The sciences and technologies are meeting today's increasing complexities with more and more specialisation. Up to the present time pharmacy students in this country have been trained to effectively fill the role of retail pharmacists, and I believe that with certain relatively minor changes which have been outlined already, our courses will continue to be suitable for this limited purpose.

On the other hand, such courses will continue to be inadequate for those students wishing to pursue a career in **hospital or industrial pharmacy**. We might, therefore, look at the needs of students wishing to proceed to these other vocations.

Until recently this country has not supported a pharmaceutical industry of any magnitude, and the neglect of this specialty in our pharmaceutical curricula is perhaps understandable. With the present rapid expansion of this type of undertaking, it seems reasonable that at least one Australian pharmacy school should undertake to supply graduates for this specialty and so remedy what is fast becoming an important deficiency. In addition, the number of pharmacists working in hospitals continues to grow and warrants immediate consideration from several (perhaps all) of our schools.

To some extent the requirements for these specialties are similar. In each case students should receive extra tuition in the fields of product development and pharmaceutical manufacture (including control procedures, which in turn necessitates a knowledge of the various methods of modern instrumental analysis). Other requirements vary; probably the industrial pharmacist should take more physical chemistry; the hospital pharmacist probably needs more pharmacology and should certainly receive tuition in hospital pharmacy administration.

Degree Courses

It might be argued that this extra study should be rewarded by a degree—whether it is called a Bachelor of Science or a Bachelor of Pharmacy does not matter very much. This would enable such people to proceed more easily to post-graduate degrees. The present position in Australia is that pharmacists wishing to do post-graduate work have to spend a further three years doing a baccalaureate degree before pursuing graduate work. This wastes much time.

We must encourage more research into pharmaceutical problems in this country—**there are too many embarrassing gaps in our knowledge**—but first it is necessary to train many more capable students to undertake these problems.

Future Needs

In 1944, Glen Jenkins (Am. J. Pharm. Ed., page 646) wrote:

"The curriculum in a pharmacy school should be fluid, responsive, progressive, and always ahead of the present."

In setting out pharmacy courses for the present time, we must look not only to the needs of the immediate future, but also try to anticipate what will be required 30 or 40 years from now. Although this is extremely difficult, there are, perhaps, certain general principles which may be laid down.

Firstly, it is essential to provide the student with sufficient basic information in the physical and biological sciences so that advances and future changes become mainly applications of basic principles already learnt. Secondly, one should endeavour to train the student to "think through" problems for himself; this discipline will help him to cope with changing professional duties throughout his life. And thirdly, he must be introduced to certain of the liberal arts and humanities to awaken an interest in this field.

At least we should look at **what is being done in other places**, try to understand **why these things are being done**, and ask ourselves, "**Which of these things are better for us too?**"

THE THERAPEUTIC USES OF POLYMYXIN B SULPHATE

By K. J. C. Johnson

History of Polymyxin

The original discovery of the polymyxins was announced in 1947, and, as not infrequently happens in the field of scientific research, three teams of research workers, working quite independently, can each claim the credit.

Benedict and Langlykke, of the Northern Regional Research Laboratories, reported their findings in the Journal of Bacteriology of July, 1947.

Stansly et al., of the American Cyanamid Co., in the Bulletin of the Johns Hopkins Hospital, July, 1947.

Ainsworth et al., of the Wellcome Research Laboratories, England, in Nature, August, 1947.

These early workers were able to show that a soil bacillus, the *Bacillus polymyxa*, produced an antibacterial substance specific for gram negative bacteria. They demonstrated its production, isolation and its effect on certain infections in mice. Stansly named his substance "Polymyxin." Ainsworth called his "Aerosporin," since he identified the producing organism as *Bacillus aerosporus*. It later proved to be identical with the *B. polymyxa*.

Further developmental work finally established that different strains of *B. polymyxa* produced five different, though related, polypeptide factors, and these were designated Polymyxins A, B, C, D, and E respectively. Of these five polymyxins, A, C and D proved too toxic for clinical use, and attention concentrated on B and E (1).

Polymyxin B was favoured in America. Polymyxin E had some support in Great Britain, though here too the B factor was preferred by many. The U.S.P. and the B.P. have officially recognised Polymyxin B.

Production

Polymyxin B is produced biosynthetically, by growing a suitable strain of *B. polymyxa* in a specially formulated fermentation medium.

Chemistry

Both the base and its salts are soluble in water. Providing the pH of the solution remains neutral or slightly acid it is stable over prolonged periods and will withstand autoclaving. Strong acids or alkalis rapidly inactivate it.

Polymyxin B sulphate has been found the least irritating salt and the substance is marketed commercially in this form. Polymyxin B sulphate is soluble in methanol (wood alcohol), but solubility decreases with the higher alcohols.

Commercially available Polymyxin B assays between 7000 and 8000 units of activity per mgm. weight of material. Dosage may be expressed in units or in a convenient but arbitrarily determined wt./unit relationship of 1 mgm. to 10,000 units. In this sense 1 mgm. does not represent the weight of Polymyxin B, but 10,000 units. Material intended to be used in this way must naturally indicate accordingly on the label.

The antibacterial activity of polymyxin is interfered with by the presence of ferrous, manganous, cobaltous or magnesium ions (2). It is postulated that bivalent ions interfere with bacterial absorption of the polymyxin.

Polymyxin has a selective activity, *in vitro*, against a wide variety of gram negative organisms, *Bacillus proteus* being perhaps the most resistant of these organisms to it. All investigators agree, however, that against *Pseudomonas pyocyannea* (*P. aeruginosa*), poly-

myxin is far more effective and reliable than any other antibiotic at present in use (3).

In high concentrations, 10-100 or more times those effective against gram negative bacteria, polymyxin is active against many gram positive organisms and even against fungi (3), but this does not have great practical significance except on occasion in certain circumstances when it is being used against topical infections and these high concentrations are possible.

Polymyxin possesses one quality which is almost unique among the antibiotics. Whilst the minimal effective concentration is bacteriostatic, a two to four fold higher concentration is rapidly and effectively bactericidal. Its action is more like that of a chemical antiseptic than an antibiotic.

Activity is directly related to the size of the bacterial population, for apparently the organism is killed by some sort of combination of bacterial cell and the antibiotic (4, 5).

Bacterial resistance to it has not yet been convincingly demonstrated, clinically at least. *In vitro* demonstrations of resistance have been shown to be due to an inadequate supply of polymyxin for the number of bacteria present and sensitivity tests should always be carried out with a standardised bacterial count inoculum (3).

The concentrations at which polymyxin B is effective against the common gram negative pathogens vary between 2-10 units per mil. Occasional strains of *Pseudomonas pyocyannea* may require up to 20 units per mil, but these are rare, and *Proteus*, if sensitive at all, 20-40 units per mil.

Toxicity and Side-Effects

(a) Nephrotoxicity

It was evidence of serious renal damage that nearly led to the abandonment of work on the early polymyxins, but luckily it became apparent that the A, D and C factors possess much more serious nephrotoxic properties than do B and E.

Polymyxin B, with which we are concerned, shows only minor and reversible signs of nephrotoxicity in adults receiving up to 25,000 units per kgm. per day for two weeks. With doses of 40,000 U. per kgm. per day (sometimes 30,000 U.), some renal damage is likely, but unless it is allowed to develop into frank renal failure, all signs will disappear within a week or so of withdrawal of the drug. Albuminuria, reduced glomerular filtration and nitrogen retention are the symptoms of nephrotoxicity, and a careful watch should always be kept for them.

Renal Impairment.—In patients with renal impairment at the commencement of treatment there will be a tendency to accumulate the drug, and these people should not receive doses in excess of 15,000 units per kgm. per day. At the same time, they should be kept under constant supervision, and adequate laboratory facilities should be available for the detection of serious renal damage.

(b) **Neurotoxicity** may manifest itself in two forms, depending on the route of administration.

After intramuscular injection of an average therapeutic dose there may be giddiness, weakness, mild fever, drowsiness and a variety of paresthesias (altered sensations) and hyperesthesia (heightened sensitivity). These symptoms may be alarming to the patient who has not been warned against them, but they usually pass off 24-48 hours after withdrawal of the drug and rarely are they so severe as to require cessation of treatment. It is an interesting observation that adults experience these symptoms far more than do children.

The intrathecal injection of 50,000 units or less is not usually accompanied by any effects suggesting nervous or meningeal irritation. With doses of 100,000 units

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there may be transient meningeal irritation with fever, headache, neck stiffness, increased lymphocytes and increased protein in the cerebro-spinal fluid. These symptoms will all subside fairly quickly after withdrawal of the drug. Higher doses than 100,000 units may produce convulsions and permanent damage to the C.N.S.

(c) Local Reactions and Pain Following I.M. Injection

Probably because of its peptide nature, polymyxin may cause a local inflammation at the site of injection leading to localised pain lasting for several hours. It may be prevented or reduced by the addition of procaine to the injection solution and also by restricting the volume of the injection to 1.5 ml. Infants and children, again, do not usually experience this reaction and it is subject to variation in the adult. The same patient, even, may complain one day and suffer no discomfort the next day from the same dose.

(d) Other Systemic Reactions

Probably as a result of histamine release, an I.M. dose of polymyxin B may be followed by flushing of the face or by urticarial rashes of a mild nature. These symptoms are usually controlled by antihistamine drugs.

Absorption and Excretion

Oral administration of polymyxin B does not yield any significant absorption from the gastrointestinal tract. Similarly it is poorly, if at all, absorbed from other mucous membranes, e.g. the conjunctiva or the bronchi.

Applied to the intact or broken skin it results in no significant blood level.

After I.M. injection, however, polymyxin B enters the blood stream rapidly. A therapeutic level is present within 30 minutes, the peak is reached in about 2 hours, and the level has fallen appreciably after 4-6 hours. Some workers in the U.S.A. claim that significant levels are maintained for eight hours and longer (6), but English results do not confirm these durations.

The drug does not reach the CBS fluid unless very large doses are given, nor does it appear in the bile. It does not pass synovial membranes or other tissue barriers and so does not appear in the body cavities. It is distributed throughout the plasma, it is not haemolytic, and has no appreciable effect on the leucocytes. It passes into the tissue plasma, but appears to be absorbed and inactivated by tissue cells (7).

I.M. doses of 20,000 to 40,000 units per kg. per day yield blood levels of from 10-40 units per ml. The level tends to build up over a period of days, and in this respect the spacing and size of doses is naturally an important factor. As indicated earlier, in the patient with renal impairment these levels will probably be doubled.

How the body disposes of polymyxin B has not yet been clearly established. Some workers can find no evidence of significant excretion (8); some claim that up to 60% is excreted in the urine (3). There is the evidence of bacterial cell absorption and tissue cell absorption on the one hand and of cumulation in patients with damaged or impaired renal function on the other, so that both sides seem to have a case.

Indications and Uses

Broadly speaking, then, polymyxin B may be stated to have considerable value as an antibacterial substance against gram negative organisms in certain selected circumstances, particularly and pre-eminently against *Pseudomonas pyocyannea*. It is most effective when it can be brought into direct contact with the invading organisms at the site of their multiplication without having to pass tissue barriers.

Because of the nature of its action, infections located in deep tissue may not receive an adequate concen-

tration of polymyxin B, and this point must always be borne in mind.

Systemic Uses

Bacteraemias due to susceptible organisms, *Ps. pyocyannea*, *B. coli*, *B. aerogenes*, *H. influenzae*, *Friedlander's Bacillus*, for example, may be treated by intramuscular, or intramuscular and intra-thecal injections, provided there is no deep tissue involvement. I.M. dosage has already been given, but it will perhaps be useful to indicate a method of preparation for an injection solution containing procaine.

For adults: Dissolve the contents of the vial (500,000 units) in 1 ml. of sterile isotonic saline and 0.5 ml. of 1% procaine solution; the appropriate dose being given every 4-6 hours during the 24. It is usual to allow for missing the dose due in the early hours of the morning if possible, adjusting the appropriate doses to make up the balance of polymyxin B.

For children: Dissolve the contents of the vial in 4.5 ml. of sterile isotonic saline and 0.5 ml. of 1% procaine solution.

Intrathecal Use

Meningitis due to *Ps. pyocyannea*, *B. coli* or *H. influenzae*, has been successfully treated with polymyxin B given intra-thecal as well as in full doses I.M. The intrathecal dose ranges from 50,000-100,000 units per day. Treatment is maintained for a few days after the CBS fluid becomes sterile.

Intravenous Use

Intravenous injections are not usually recommended, but this route has been used in cases of severe septicaemia. If considered necessary, then it is administered in doses of 2000 units per kg. hourly for five doses, providing a very high blood level over a short period of time.

Urinary Tract Infections

Polymyxin B is particularly valuable in pyelonephritis, since the organisms are usually of the gram negative type and since it can attack them on two sides, as it were; from the side of the circulation and from the side of the urine in the tubules as well as in the lower urinary tract. It is important to remember, however, that if the blood supply to the site of infection in the kidney is inadequate and if there is obstruction then results are likely to be poor. In such circumstances, of course, all antibiotics are likely to fail. Even so, polymyxin may well serve to control acute symptoms or to be useful pre-or post-operatively.

Sub-Conjunctival Injection

For *Ps. pyocyannea* infections of the eye, when corneal ulceration has developed or threatens, the eye may be saved by subconjunctival injections of 200,000-250,000 units, daily, combined with local application of the drug in the form of drops or ointment containing 10,000 units, up to 100,000 units, per ml. or per gramme.

Irrigation

The lower urinary tract and body cavities may be usefully irrigated with a solution of polymyxin B in sterile normal saline, containing 10,000 units and up to 100,000 units per ml. The total amount of drug used should not exceed 5,000,000 units per day.

Oral Use

Polymyxin B given orally will greatly reduce the bacterial count in the intestines. This effect, combined with the freedom from toxicity and side effects, may be made use of in the treatment of gastrointestinal infections or in the preparation of patients for surgery of the bowel.

The dosage range is from 250,000 units for infants to 1,000,000 for adults, three or four times a day.

Topical Use

Because polymyxin B so rarely produces sensitivity in the patient, or bacterial resistance, and because of negligible absorption from either the intact or broken skin, it is highly effective and satisfactory in the treatment of topical infections by susceptible organisms. Alone, or in combination with other, equally safe, antibiotics with a gram positive spectrum, its topical use has become widely and favourably known. A solution of 10,000-100,000 units in 1 ml. of sterile isotonic saline may be used as a wet dressing or as eye or ear drops. The same strength may be incorporated in an ointment or lotion of the cream type. In cream bases cationic emulsifiers are to be avoided, for cations inactivate the antibiotic. This is not a chemical incompatibility so much as an antimicrobial incompatibility; cations seem to compete with polymyxin for the cell receptor. Carbowax has proved satisfactory in this respect, but it is probably better to use non-ionic emulsifiers.

Synergism

There are interesting indications that the combination of polymyxin B with certain other antibiotics results in a synergistic effect. Thus, in urinary infections, oxytetracycline 0.5 G. by mouth four times a day will

enhance the effect of polymyxin B by intramuscular injections (9).

In combination, polymyxin B potentiates the activity of neomycin against staphylococci *in vitro*. Similar synergism has been observed with streptomycin and chloramphenicol (10).

Polymyxin B is not compatible with penicillin, a precipitate being formed when the two are mixed. Such synergism is worth exploiting particularly when dealing with organisms likely to become resistant to the favoured single antibiotic.

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SCIENCE SECTION

INTERFERON

A NEW WAY OF FIGHTING VIRUSES

In a recent B.B.C. broadcast as part of the feature "Science Review", Dr. Alick Isaacs described an exhibit that he had arranged with Dr. Burke of the National Institute of Medical Research for a Royal Society (London) Evening Meeting. He said:

"One of the needs in medicine today is for an antibiotic that will act on the small viruses—those that cause influenza, the common cold, poliomyelitis, and many other diseases. These viruses grow inside the patient's cells, and the problem is to find a way of damaging the virus without harming the patient. So far this has not proved to be possible, but what we have found is a new approach to the problem. This is based on the well-known fact that when one virus has occupied a group of cells it interferes with the growth of other viruses added to these cells. It seems that this interference is due to a substance produced by the first virus. We call this substance interferon, and we can isolate it, and show that it has in the laboratory many of the characteristics of an antibiotic for viruses.

"Interferon does not kill viruses—it stops them from multiplying inside cells. And its effects are directed not only against a single virus but against a wide range of viruses. How does interferon act? A fair guess is that it resembles a substance produced during the normal process of virus development. The resemblance may be enough to ensure that interferon enters into the virus development but since it is the wrong substance (from the point of view of the virus manufacturer) it probably blocks the machinery and brings the production processes to a halt. This is certainly the type of selective damage we would like to be able to produce, and at the moment it looks as if interferon can block virus production without grossly damaging the cell. What makes interferon so interesting is the fact that it is produced by living cells, and we might speculate that perhaps the cell knows best where the processes of virus synthesis are most vulnerable to attack.

"It should certainly be easy to produce as much interferon as is needed, and to make it as concentrated as we would want. But once we start using very concentrated preparations it is possible that they may prove toxic to man, or they might be ineffective for some other reason."

INFECTION FROM WOOL BLANKETS REMOTE

Tests by scientists in Melbourne hospitals have shown that the danger of cross-infection by wool fibres from blankets is remote, Dr. F. W. G. White, Deputy Chairman of C.S.I.R.O., has said. Only a minute percentage of the floating fibres in the air of hospitals are wool fibres.

These results of research by C.S.I.R.O. could prevent the loss of a major market for Australian wool.

Dr. White was commenting on a statement that the Royal Adelaide Hospital had standardized on the use of cotton blankets to minimize cross-infection.

The extent of cross-infection has troubled hospital authorities throughout the world for a number of years, Dr. White said.

Although it has been demonstrated that hospital furniture becomes contaminated with organisms that could cause infection of wounds, the hospital blanket has been considered the main source of infection on the assumption that contaminated fibres are released into the air during bed-making.

Dr. White said that research carried out by C.S.I.R.O. Wool Textile Research Laboratories in conjunction with Melbourne hospitals has shown that 96 per cent. of the fibres in hospital air are cotton or other forms of cellulose.

Only 3 per cent. of the floating fibres are wool fibres.

Dr. White said that it has also been demonstrated that bacteria on wool blankets can be killed by chemical means without deterioration of the wool provided the blankets are shrinkproofed during manufacture.

Several processes are now available commercially which produce shrinkproofed blankets which stand up to repeated laundering.

Woollen blankets have established themselves as combining the desirable properties of lightness with warmth, long life, and non-inflammability. They give out warmth as they absorb moisture.

The absence of static electricity with woollen blankets makes them safe in the operating theatre and more convenient in bed-making.

The accumulating evidence from research gives no justification for seeking any substitute for well proven woollen blankets for hospital use.

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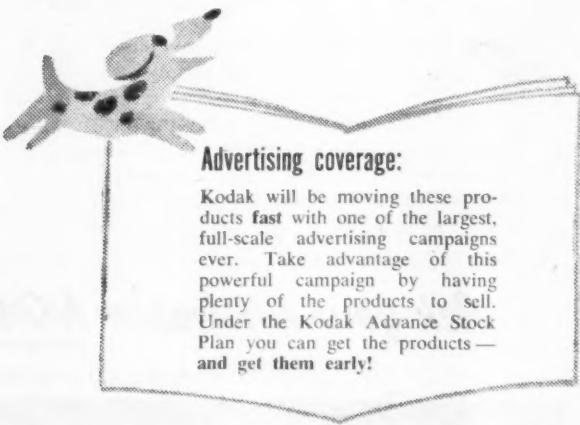
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THE STERILIZATION OF HOSPITAL BLANKETS

N. E. Poynter (Ph.C.), Manager, Pharmacist,
Royal Hobart Hospital.

Contaminated bedding is recognized as a frequent source of cross-infection in hospital wards.

Linen, mattresses and metal bed-frames may be sterilized satisfactorily by ordinary methods of laundering, heat sterilization, fumigation, or washing with antiseptic solutions.

Elimination of infection from blankets, under conditions existing in most hospitals, is certainly a more difficult matter, particularly as they are an expensive item of basic equipment, prone to damage and rapid deterioration by faulty laundering. Details of various laundering techniques have already been published.

Blowers & Wallace (Lancet, 1955, I, 1250) suggest frequent washing in non-ionic detergent solution, and cationic quaternary ammonium antiseptic solution (e.g., "Lissapol N" and "Cirrasol O.D.").

Frisby (B.M.J., 1957, 2, 506) draws attention to penicillin-resistant strains of *Staph. aureus* harboured in blankets and not removed by ordinary laundering. He recommends "Terylene", which may be boiled, as a possible alternative to woollen blankets.

Steingold & Finch (J. App. Bact: 1954, 17, 159) suggest variations on the non-ionic detergent method with final rinse in cationic quaternary ammonium antiseptic solution. They draw attention to the **residual inhibitory effect** of quaternary ammonium compounds when used in this way.

Dr. J. N. Gregory (Head, Isotopes Section, Australian Atomic Energy Commission) in a personal communication, refers to sterilization of hospital equipment by radiation from reactor waste material. Bone and artery for storage banks have been sterilized this way in the U.S.A., although . . . "the possibilities of early practical application in Australia are not very promising".

These, and various other methods examined by Royal Hobart Hospital, for various reasons, have not proved entirely satisfactory.

T. A. Pressley (C.S.I.R.O. Wool Textile Research Laboratories, Melbourne), in what appears to be the most important contribution to date (Progress Report on Blankets, May 14, 1958), discusses laundering with non-ionic detergents and quaternary ammonium compounds. Details of physical and bacteriological examinations of hospital ward dust may upset some accepted ideas on the spread of infection. He concludes that all-wool

shrink-resistant blankets ("SI-RO-FIX" or similar treatment) are the most durable, and may be laundered by the non-ionic detergent-quaternary ammonium method. Although it is further stated . . . "dry cleaning is preferable to water-washing, especially if quaternary ammonium compound is dissolved in the solvent . . . such a procedure is used by the Royal Hobart Hospital".

Dry-cleaning technique was adopted by the Royal Hobart Hospital because other methods examined resulted in considerable damage to blankets, limiting their effective life and causing heavy increase in costs.

Details of equipment, chemicals and technique are as follows:

Equipment

1. AGITATOR—Motorized cylindrical drum of approx. 50 gal. capacity carrying a normal charge of 60 lbs. of blankets.
2. SPIN-DRIER—Upright motorized type, capacity 40 lbs. of blankets.
3. TUMBLE DRIER—Warm-air horizontal cylinder closed type, capacity 40 lbs. of blankets.
4. FILTER PLANT—Using filter earth and filter pump and vacuum still.
5. PUMPS—Pipe lines, storage tanks, etc., were fabricated and are maintained and operated by hospital technicians (under Mr. J. Clark, of St. John's Park). All electric motors are suitably protected from sparking.

CONTROL of humidity and water content of solvent, etc., follows normal dry cleaning practice.

Chemicals

Petroleum Solvent, commercially available as "White Spirit", etc.

Various quaternary ammonium compounds have been used at the rate of about 0.03 per cent. W/V of ACTIVE SUBSTANCE "Cirrasol O.D." "LissolamineA" "Hyamine 1622" and all proved satisfactory. Attached Table 1 shows percentage of active substance in each.

A suitable mixture may be formulated as follows:

Hyamine 1622	6 lbs. (av.)
Triton X-100	2 fluid oz.
Deodoriser (Neutralizer Helio— by Magnus Mabee, Reynard)	1 fluid ounce
Acetone	20 fluid ounces
Industrial Methylated Spirit	40 fluid oz.
Water	to 1 gallon

This may be added to the Solvent at the rate of 1 pint per 50 gallons (approx.) of solvent.

TABLE 1
QUATERNARY AMMONIUM COMPOUNDS WITH GERMICIDAL ACTIVITY

Trade Name	Description	Type	Supplier	Price (appr.) of active material
"Cetavlon"	Cetrimide B.P. (98%)	Cationic	I.C.I. Ltd.	53/3 per lb. (active mat.)
"Cirrasol OD"	Cetyl-tri-methyl Ammonium Bromide (12½% approx.)	Cationic	I.C.I. Ltd.	24/8 per lb.
"Hyamine 1622"	Benzethonium Chloride (98%)	Cationic	Rohm & Haas (Robert Bryce) Melbourne	18/6 per lb.
"Lissolamine"	Cetyl-tri-methyl Ammonium Bromide (50% approx.)	Cationic	I.C.I. Ltd.	20/4 per lb.

TABLE 2
SURFACE ACTIVE DETERGENTS AND WETTING AGENTS

Trade Name	Description	Type	Remarks
"Lissapol C"	Sulphated Primary Alcohol	Anionic	Incompatible with
"Teepol"	Sulphated Secondary Alcohol	Anionic	cationic quaternary
"Comprox"	Sulphated Secondary Alcohol	Anionic	Amm. compounds
"Triton X-100"	Aryl alkyl Alcohol	Non-ionic	Compatible with cationic
"Lissapol N"	Polyethylene glycol compound	Non-ionic	quaternary Amm. compounds

METHOD

Add antiseptic mixture to Solvent and rotate agitator for a few minutes. Charge agitator with weighed load of blankets and rotate at slowest speed for about 20 minutes. Transfer to spin-drier and spin until "damp-dry". Finally dry in closed tumbler with warm air, at slowest speeds.

Solvent is replaced (and later filtered) when judged necessary, according to degree of contamination with water, dirt, etc.

TABLE 3
COMPARISON, DRY-CLEANED AGAINST
UNTREATED BLANKETS, Royal Hobart Hospital
(Samples collected by "shake" method, and cultured for
Staphylococcus)

Total No. Blankets	Dry-Cleaned by Solvent/Q.A.C.	Untreated
168	4.65% Cultured Positive 95.35% Cultured Negative	21.95% Cultured Positive 78.05% Cultured Negative

SUMMARY

1. The most satisfactory and durable blanket for hospital use appears to be the type manufactured from best quality pure Australian wool, and treated against shrinkage by the "SI-RO-FIX" method or similar methods.
2. Laundering of blankets may be carried out using a non-ionic detergent followed by quaternary ammonium antiseptic treatment. Unless controlled most carefully shrinkage and felting may occur.
3. Dry-cleaning of blankets, by the method developed at the Royal Hobart Hospital appears to be generally satisfactory. Blankets are rendered clean, relatively sterile, and some degree of residual protection against re-infection is to be expected. Blankets appear to remain in good condition, even after repeated dry-cleaning, retaining normal shape, colour and texture.

It is desirable that each patient be given a fresh set of blankets.

Blankets should be stored in suitable protective bags immediately following dry-cleaning.

ACKNOWLEDGMENT is made to Dr. F. G. Lennox and Mr. McQuade, of C.S.I.R.O.; Drs. R. S. Parsons and P. Sellars, of Royal Hobart Hospital; Mr. E. Hill, Tasmanian Government Analyst; Mr. J. Clark, of St. John's Park Hospital, and to Mr. J. M. M. Drew, F.R.C.S., O.B.E. (General Superintendent, Royal Hobart Hospital) for permission to publish these views.

Experimental work has been carried out at the laundry of St. John's Park Hospital, with the helpful co-operation of the Administrative Officer, Mr. Trebilco.

APPROVED NAMES

The following Approved Names have been devised or selected by the British Pharmacopoeia Commission, with the intention that if any of the drugs to which these Approved Names are applied should eventually be described in the British Pharmacopoeia the Approved Name should be its official title. The issue of an Approved Name does not imply that the substance will necessarily be included in the B.P. or that the Commission is prepared to recommend the use of the substance in medicine. The names appearing in the second column include some registered trade marks.

Approved Name	Other Names
Ambazone	1:4-Benzquinone amidinohydrazone thiosemicarbazone hydrate
Beclamide	Iversal <i>N</i> -Benzyl- β -chloropropionamide
Benztropine	Nydrane 3-Diphenylmethoxytropane
	Cogentin is the methanesulphonate

Approved Name	Other Names
Bisacodyl	Di-(<i>p</i> -acetoxyphenyl)-2-pyridylmethane
Chlorphenesin	Dulcolax
Clemizole	3- <i>p</i> -Chlorophenoxypropane-1:2-diol
Clemizole penicillin	1- <i>p</i> -Chlorobenzyl-2-pyrrolidinomethylbenzimidazole Allercur is the hydrochloride
Deanol	Benzylpenicillin combined with 1- <i>p</i> -chlorobenzyl-2-pyrrolidinomethylbenzimidazole
Dimethisterone	Megacillin; Neopenyl
Ethoheptazine	2-Dimethylaminoethanol
Framycetin	Atrol is the bitartrate
Furazolidone	6a:21-Dimethyllethisterone
Inproquone	Secrosteron
Pempidine	Ethyl (\pm)-1-methyl-4-phenylazacycloheptane-4-carboxylate
Phytomenadione	Zactane
Piprinhydrinate	An antibiotic derived from <i>Streptomyces decaris</i>
Sulphaethidole	Soframycin is the sulphate
Sulphathiourea	3-(5-Nitrofurylideneamino)oxazolidin-2-one
Trimethidinium methosulphate	Furoxone
	2:5-Bisethyleneimino-3:6-dipropoxy-1:4-benzoquinone
	1:2:2:6:6-Pentamethylpiperidine
	Perolyse is the hydrogen tartrate; Tenormal is the hydrogen tartrate
	2-Methyl-3-phytyl-1:4-naphthoquinone
	Vitamin K ₁
	Konakion; Mephytone
	Diphenylpyraline salt of 8-chlorotheophylline
	4-Diphenylmethoxy-1-methylpiperidine salt of 8-chlorotheophylline
	Kolton; Mepedy
	5-p-Aminobenzenesulphonamido-2-ethyl-1:3:4-thiadiazole
	Sethadil
	p-Aminobenzenesulphonylthiourea
	Badional
	(+)-3-(3-Dimethylaminopropyl)-1:8:8-trimethyl-3-azabicyclo[3:2:1]octane di(methyl methosulphate)
	Camphidonium
	Index to the Supplementary List (See the above list for the full Approved Name and the chemical name)
	Proprietary Name, etc. Approved Name Reference
Allecur	Clemizole
Atrol	Deanol
Badional	Sulphathiourea
Camphidonium	Trimethidinium
Cogentin	Benztropine
Dulcolax	Bisacodyl
Furoxone	Furazolidone
Iversal	Ambazone
Kolton	Piprinhydrinate
Konakion	Phytomenadione
Megacillin	Clemizole Penicillin
Mepedy	Piprinhydrinate
Mephytone	Phytomenadione
Neopenyl	Clemizole Penicillin
Nydrane	Beclamide
Perolyse	Pempidine
Secrosteron	Dimethisterone
Sethadil	Sulphaethidole
Soframycin	Framycetin
Tenormal	Pempidine
Vitamin K ₁	Phytomenadione
Zactane	Ethoheptazine

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SH:TAHRA

The Development of the Science of Nutrition

With Special Emphasis on the British Contribution Thereto

By Greta Burman, Ph.D. (Vienna), (Victorian College of Pharmacy)

Prof. Drummond dedicated his book "The Englishman's Food" to one William Stark. Anyone reading this name would most likely not have taken any notice of it or assumed Mr. Stark to be a well-liked relative or some person to whom the author felt personally obliged.

However, this dedication has a deep significance. William Stark was one of the vast number of little, unknown cogs in the huge wheel of scientific development. He was not a genius, he was not eminent, his work did not leave an indelible impression on the records of human endeavour. He was a man who, sincerely interested in his work and not deterred by mishaps and even illness, helped to collect and interpret the many facts which form the basis and bulk of the knowledge we have today. He was only a little out of the ordinary, not sufficiently so to be among the famous of this world; but still we are indebted to him. Without the patient and unselfish support of men like him, the famous ones may have never reached their aims, because they needed the groundwork on which to build.

Although it is quite true what one of the most famous men of all times—Louis Pasteur—once said, "Chance favours only the one who is prepared," the sort of chance that lights the spark of understanding in a maze of unco-ordinated observations, or suddenly reveals the significance of an unexpected result of a planned experiment; but many are prepared, and chance or luck still passes them by, the luck that lifts the genius above the "merely brilliant" man, the world famous above the well known in his time and country.

This happens everywhere and in every field of activity, in the Arts as well as the Sciences. The science of Nutrition is no exception. This article, inspired by Prof. Drummond's simple dedication to an apparently unimportant man, will be devoted to the work of the many people who, while neither causing any revolutionary changes nor shaking the fundamental truths about our physical needs, have helped to bring them about.

We are well on the way to having a clear picture of our bodily functions and of the part our food plays in supporting as well as disturbing them. We shall see and may be proud of the fact that the British Commonwealth has contributed a very fair number of the people who have helped to form this picture.

The general idea about food for about two thousand years, until the end of the Middle Ages and well into the New Era, was influenced by the teachings of Hippocrates and Galen, based on the "complexions" or "humours" of man; sanguine, phlegmatic, choleric and melancholic, which were caused by the blending of the qualities of each two of the four fundamental elements. The fundamental elements of the ancients, we recollect, were water, earth, air and fire, their respective qualities, moist, dry, cold and hot. All food was thought to be composed of the same four elements, and diets were prescribed accordingly. Hot and moist elements were

supposed to produce sanguine complexion, while cold and dry ones would create a melancholic. Lamb, for instance, was considered to be moist and cold, so were lettuce and herbs; wine was hot and moist; bread hot and dry or cold and dry. Fruits held a special position. Their laxative properties were mistakenly thought to cause the summer fevers (diarrhoea) and therefore considered as definitely harmful in every instance. A full diet for the growing body, a moderate one for the middle aged and a thin diet for the old had been devised by Galen.

Paracelsus, a Swiss, was the first man to openly denounce Galen's teachings (1550), even if he did not replace them by anything better; the merit of his work lies in its opposition to untested tradition.

It was not until a hundred years later, when Harvey announced the circulation of the blood, Leeuwenhoek revealed the world under the microscope and Robert Boyle laid the foundation for our knowledge of acids, alkalis and salts, that the spell was finally broken.

Although Boyle himself believed in many of the old ideas on food and medicines, and had no intention to overthrow them, his work certainly did. His researches, published in "The Sceptical Chemist" in 1661, proved beyond doubt that the old elements were mixed bodies.

Walter Harris in *De Morbis Acutis Infantum* was the first man to make use of the new knowledge of acids and alkalis by prescribing alkaline remedies against the acids prevailing throughout the body. Isn't it unfortunate that some of today's faddists have not progressed from there!

Thomas Sydenham realised that the wisdom which lay behind Hippocrates' insistence on careful study of the patient and his symptoms had in the passage of centuries become as obscured by convention and concern for orthodoxy as had the teachings of the founder of Christianity and His early disciples. (Quoted verbally from *The Englishman's Food*!) He broke away from most of these conventions and tried to build up again the method of diagnosis based on close observation of symptoms.

The Belgian Van Helmont presented the first theory of digestion through ferments and acid and function of excretion. Perspiration and particularly insensible perspiration were not suspected to carry excretory material until Sanctorius, a professor at the University of Padua (Italy), experimented with his own weight changes after eating. He himself was not able to explain them, though. It was left to Robert Boyle again to show that air and gases are substances, have weight. Mayow proved in 1668 that the air around us was needed for respiration. He even knew that not the whole air we breathed in took an active part, but only some of it. He also showed that venous blood is changed to bright red by this substance in the air, was near to discovering oxygen. He also understood that breathing was an interchange of gases between air and blood. As usual, no notice was taken of this discovery.

Boyle's attack on the old ideas of "elements" was carried further by **Joseph Black**. His experiments showed that "fixed air" (that is carbon dioxide) was distinct from ordinary air, that it was present in expired air, not respirable itself, though not toxic.



Sanctorius
He is shown seated in the chair attached to a yard arm, by which he recorded his changes of weight after eating

Priestley gave us the knowledge of his famous dephlogisticated air, which he recognised as the respirable constituent of the atmosphere.

Today we call it oxygen, and it all seems very simple and easy. But for hundreds of years it was quite confusing. What a tribute to the human mind and ingenuity to find out at all that the "nothing" around us is really something, has weight and function, that without it life would cease.

Scurvy

Prevalent diseases for many centuries were Scurvy and Rickets. The former persisted through most of the year, as fresh fruits were not eaten at all because of fear of ensuing fevers, and vegetables were only available during a short period. Potatoes were not grown as a crop in England until the eighteenth century. (In Ireland in the seventeenth century.)

Scurvy was thought to be caused by salt air and salted meat. This opinion was strengthened by the fact that sailors suffered from it more than people on land. When the sailors went on land they could be cured pretty soon. What could be more obvious than

the connection between the air out over the seas and the ever-recurring sickness. The English had by then become the first seafaring nation in the world, so the need for a cure was more urgent than in any other country.

Several cures for scurvy were known, the value of citrus fruits realised. Robert Boyle writes of an infusion of lemon rind and barley water. Others, particularly the Dutch, used lepelgrass (scurvygrass). Pine-shoots were used too. But it was not until the middle of the eighteenth century, when **William Cadogan** completely rejected the belief that fruit and vegetables were bad that these were included in the daily food of all classes.

It was **James Lind** who finally proved in 1757 that scurvy could not be caused by salt, by showing that neither workers in salt mines nor sailors who drank salt water suffered from it. Earlier writers had alluded to the value of oranges and lemons, but he gave a convincing account on how he had treated twelve sailors, all of whom were on the same diet but had different "extras." These were cyder, elixir vitriol, vinegar, a mixture of garlic, mustard seed, horseradish and Peru-balsam, and last but not least oranges and lemons. The men on oranges and lemons were cured within a short period. Lind could not explain what the cause of the disease might be.



James Lind,
Author, in 1757, of Treatise on Scurvy

Another Englishman, **Gilbert Blane**, found the right answer: Absence of fresh fruit and meat and vegetables. It took another fifty years before the curative properties of lemons were finally established and made an essential part of provisions for longer voyages. Not a single man was ill from them on on many long trips. Only when limes were used instead of lemons did scurvy recur. This happened during the Crimean War. Florence Nightingale claimed that scurvy had caused more loss of life among the British forces than any other cause. Two hundred years before that, **Hawkins** and **Lancaster**

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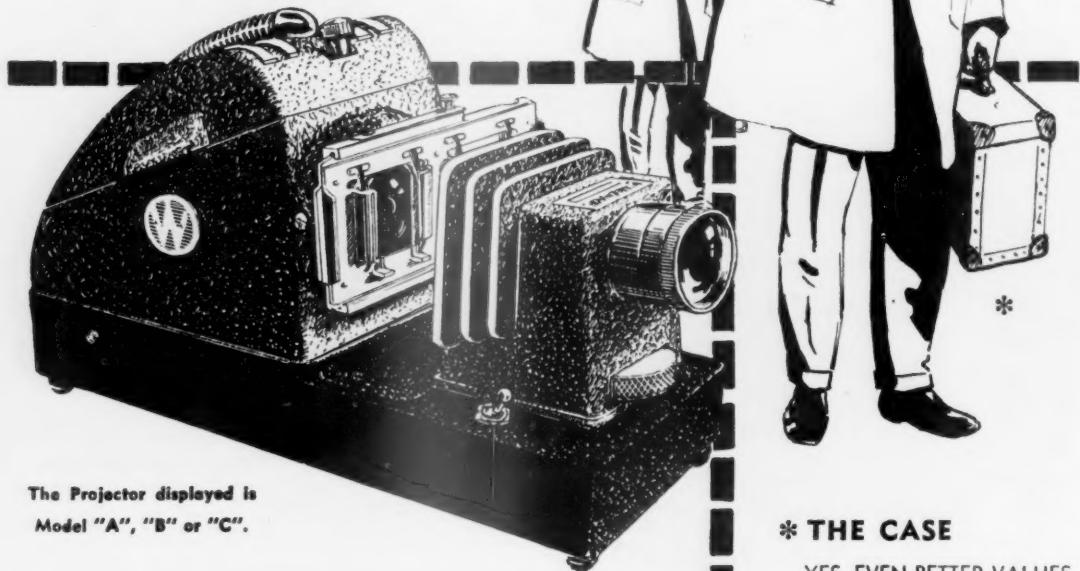
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had described the symptoms of scurvy and found lemons strikingly effective.

Progress moves slowly, and more than a hundred years had to pass after the establishment of lemons as a cure for scurvy, before the active principle in the lemons was recognised and isolated.

Today we know it can be synthesised and sold over the counter as a little ascorbic acid tablet. When we buy one we never stop to think how many hundreds of years of searching and failure, suffering and success are hidden in each one of them.



Daniel Whistler, M.D.

It was scurvy that had caused the death in 1770 of **William Stark**, the brave young doctor who may be called the first student of experimental dietics. He had obtained his degree at Leyden, which had a famous medical school at that time and worked under John Hunter in London. He had become interested in the functions of foods through Benjamin Franklin, who preached (though no longer practised) the doctrine of simple life. Stark took him very seriously and tried several "simple diets, bread and water with some sugar first." After ten weeks scorbutic symptoms could no longer be ignored. He recovered on meat, milk and wine. Next he lived on bread and cooked meat. His gums stayed healthy. Then he changed over to puddings. Within a month scurvy recurred and was cured with blackcurrants! After that he subjected himself to yet another simple diet of fat and lean meats which he planned to follow with a vegetable and fruit regime, but unfortunately changed to honey and cheese. By then intestinal disorders and scurvy had developed too far. He had consulted the authority on scurvy of the time, but unfortunately this man, still enthralled by the salt air-salt meat theory, just advised him to omit salt from his diet, which could not lead to success.

His experiments did not add much to the knowledge

of the nutritive value of foods at the time, because the implication was not understood. Today we have a very clear picture of his nutritional condition.

Pre- or subscorbutic disorders were not suspected anywhere until **Drs. W. B. Cheadle** and **Thomas Barlow** pointed them out towards the end of the nineteenth century. They became known then as Barlow's disease. The symptoms could usually be observed on children already suffering from rickets as a result of improper feeding, which had become quite common, in those days even among the wealthy people. Dr. Cheadle advocated fresh fruit juices in the nursery, although he could not have known anything about anti-scorbutic vitamins. But just at this time Pasteur's discoveries had hit the world's headlines and, as it always will happen, people carried them ad absurdum. Infection was lurking around every corner. Everything had to be sterilised. Cheadle noticed that the boiling of milk coincided with an increase of scorbustic symptoms.

On the other hand, it was not until then that the old idea which was still lingering in people's minds, that diarrhoeas were caused by some property inherent in fruits, was finally given up, because their bacterial origin began to be known and understood.

Barlow's paper on scurvy is even today regarded as a classic in the literature on that disease.

Rickets

Although rickets did not become widespread in England until industrialisation had crowded people together in the cities towards the beginning of the nineteenth century, it had found many victims for more than two hundred years before that. On the Continent it was



Francis Glisson, M.D.

(and still is) known as the "English Disease." Some authorities claim that this may not be due to its prevalence in England, but because British doctors were the first to recognise it and describe its symptoms.

Daniel Whistler, also a graduate of Leyden, wrote his thesis about it in 1645, and **Francis Glisson** published a very comprehensive work on the subject in 1650. It does not really concern us here, but it may be interesting to learn that in those days there was quite some controversy regarding the priority of these two publications or rather the principal studies elaborated in them.

Men of science and medicine, unselfishly devoted to helping their fellowmen, have not been above fighting about who has given the first helping! It happens today too.

Stephen Hales, a vicar, not a medical man, showed in 1738 that the zone of uncalcified bone matrix, between the main shaft of the long bones and the hard caps which end them off, grows continuously until maturity.

We know today that, if this zone ossifies for some reason before the chronological age of adulthood is reached, growth will stop and dwarfism result. Calcium deposition and ossification are usually regulated by the pituitary and parathyroid glands, but defective diet is often responsible.

If vitamin and/or mineral deficiency retard growth during childhood, calcification will be completed too early.

Improper diet had been suspected for some time, but only vaguely. Towards the end of the eighteenth century bone substance had been analysed and it had become known that it consisted of Calcium and Phosphorus. Bonhomme, a Frenchman, who knew that Calcium-phosphate was soluble in acids, thought the development of acids in the body to be the cause of bone-softness in rickets. He did not get the real cause, but he realised the essential fact of Calcium—and phosphate deficiency. His ideas did not find fertile ground in England. It was, as yet, too early.

Cod liver oil had been applied externally for centuries to alleviate all kinds of joint pains. Its internal use, already practised in Iceland and Scandinavia for some time, was first advocated in England by **Drs. Kay and Darby** after a successful trial at the Manchester Infirmary in 1782.

Still, rickets kept on increasing through industrialisation, not only because people moved from the country into the cities and got less sunshine and poorer food, but also because in its wake followed a decline in breast feeding. Among the well-to-do it was a fashion, for the poor it was a necessity. Mothers had to be at work and could not do it. Rickets also appeared among those babies who were breast fed by mothers whose diet was severely deficient, and there were many. A large number of deaths were also caused through dirty bottles and inadequate teats. Teats were made of softened parchment or leather with a small piece of sponge which was a death trap. **Heywood** patented hygienic rubber teats in 1856.

Artificial feeding consisted mainly of starchy soups and at best of condensed skim milk. **Dr. Daly** pointed out in 1875 that children on such a diet could put on weight and look well, but had considerably less vitality. He drew attention to the simultaneous appearance of symptoms of rickets.

Faulty diet and bad living conditions began then to attract more attention than any other factors as possible causes of rickets.

(To be continued.)

SERVICES CANTEENS' TRUST FUND POST-GRADUATE SCHOLARSHIPS

The Trustees of the Services Canteens Trust Fund are inviting applications for two Post-Graduate Scholarships, one for study overseas and the other for study at an Australian University.

The fields of study in which the scholarships may be awarded are:

(a) For Study Overseas

- (i) Any course at any approved University throughout the world;
- (ii) Aeronautics in England or America;
- (iii) Travelling scholarship in any field.

An applicant wishing to pursue any other branch of study may apply to the Trustees for a scholarship in that field.

(b) For Study in Australia

Study or research in any approved subject at any Australian University.

Value of Scholarships

The scholarship for study overseas is valued at £A800 per annum. The scholarship for study in Australia is valued at £600 per annum. Both scholarships will be tenable for a period of up to three years.

Eligibility

The scholarship is open to a child (including stepchild, adopted child or ex-nuptial child) of a person who was at any time between 3rd September, 1939, and 30th June, 1947:

(a) A member of the Naval, Military or Air Forces of the Commonwealth; or

(b) A member of any nursing service or women's service attached or auxiliary to any branch of the Defence Force of the Commonwealth; including

(c) Members of the Canteens Staff of any ship of the Royal Australian Navy, and any person duly accredited to any part of the Defence Force who served in an official capacity on full time paid duty.

Selection

Selection will be entirely on merit and will be competitive. A scholarship will be granted only to an applicant who, in the opinion of the Trustees, has outstanding ability, is of suitable character and is likely to obtain lasting benefit to himself or herself and to Australia by further study. The scholarships will not necessarily be awarded each year.

The following will be taken into consideration in determining the award of the scholarships:

- (i) Academic career.
- (ii) Ability for research work.
- (iii) Character.
- (iv) The future value to Australia of the subject of research selected.

The selection each year of the scholars to be awarded the scholarships will be made from all applications received from eligible persons by the prescribed closing dates.

Closing Dates

Applications must be lodged with the General Secretary, Services Canteens Trust Fund, Victoria Barracks, St. Kilda Road, Melbourne, by the prescribed closing date. Applications should be transmitted through the Regional Secretary in your State.

Applications for the scholarship for study overseas close on November 1, 1958. Applications for study in Australia close on January 10, 1959.

Application Forms

Application forms and any further information may be obtained from the General Secretary, whose address is shown above, or the Regional Secretary, Services Canteens Trust Fund in your State. The addresses of Regional Secretaries are:

- Queensland: Victoria Barracks, Brisbane.
- New South Wales: 84 Pitt Street, Sydney.
- Victoria: Victoria Barracks, Melbourne.
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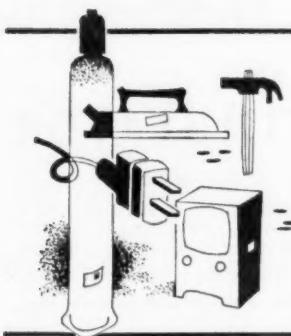
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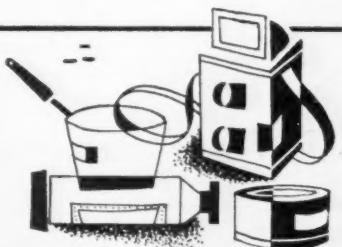
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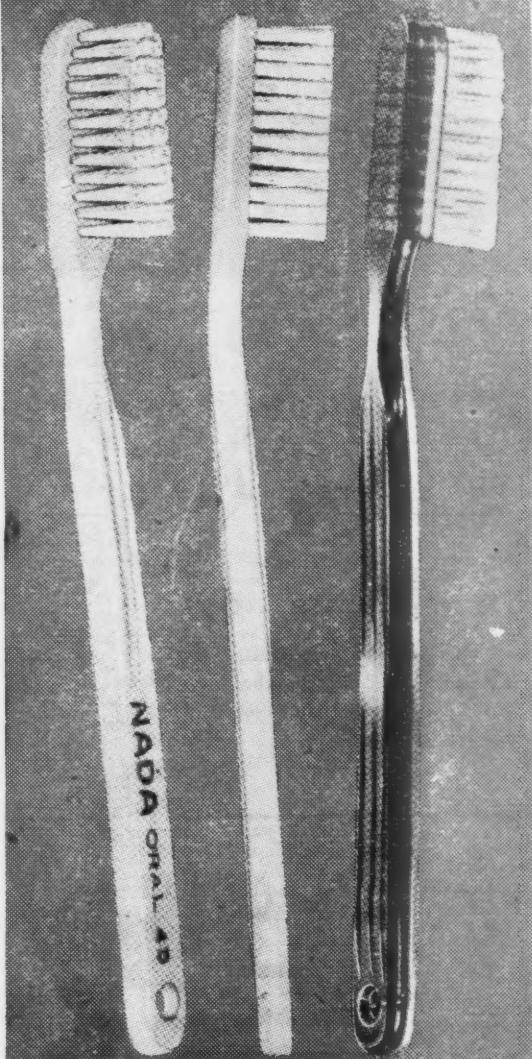
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(7706)

An Introduction to and Survey of the B.P. 1958

Address delivered by Mr. A. W. Callister on June 11, 1958, before members of the Pharmaceutical Society of Victoria.

The first impression of the B.P. 1958 is that there is little difference from the previous edition, in spite of many deletions and additions. The volume is obviously a continuation of the development shown in the '53 and '48 editions; further evolution from a formulary to a book of prime standards. The emphasis is now, not on methods of preparation but on stringent tests for identity and purity of the product by whatever method it has been prepared.

Many of the materials deleted from the B.P. are taken up in the B.P.C. Here, too, are found the details of compounded preparations and much practical information of the properties and uses of the materials described. The B.P.C. is now the working manual for the chemist in practice and for the student, while the B.P. becomes a book of reference.

Revision

The introduction to the B.P. names 22 Committees set up under the B.P. Revision Committee to prepare material for various sections of the Pharmacopoeia. Many contributing Committees, both in Great Britain and overseas, are mentioned as well, including two Australian Committees, viz.:

The B.P. Revision Committee (Canberra), and
The Australian Committee on Pharmacopoeial Revision.

The B.P. Revision Committee (Canberra) functions under the Commonwealth Director-General of Health. It includes a representative of Medicine, Dr. B. L. Stanton; a Pharmacologist, Professor R. Thorp, and myself, as representative of the Pharmaceutical Association of Australia. This is a consultative Committee and communications from the B.P. Revision Committee are forwarded through Dr. Metcalfe to each of the members. Their replies and comments are returned to the Director-General of Health for transmission to the British Committee. Since there is no consultation between members and no combined discussion of the material, no concerted opinions are obtained and little result from this method of approach can be recorded.

In 1950 the Victorian Health Department, by invitation from the B.P. Revision Committee, through Dr. Brennan, set up a State Revision Committee with Professor McCalum as Chairman. This Committee was constituted as follows:

Victorian Department of Health: Dr. R. J. Farnbach.
British Medical Association: Dr. B. L. Stanton, Dr. G. H. Pennington.

Australian College of Dentistry: Dr. L. F. Heine.
Pharmacology Department of the Melbourne University: Prof. F. H. Shaw.

Pharmaceutical Society of Victoria: Messrs. A. T. S. Sissons and A. W. Callister.

This Committee had direct communication with the Revision Committee of Great Britain. Meetings were held during the years 1950-1958 to report and comment on material for inclusion in the B.P. 1953, the Addendum of 1955 and the B.P. 1958. As no other State Revision Committee had been set up, this group came to be referred to as the Australian Revision Committee.

By reason of the direct route of communication and the weight of the combined recommendations of this Committee some amendments from this group have been adopted by the Pharmacopoeia Commission, e.g.:

In 1953 the monograph for Barium Sulphate specified a method of preparation by precipitation and a sedimentation test which ensured suitable particle size.

In 1958 a table of strengths of solutions of local Anaesthetics for us as Spinal Block, Nerve Block, Infiltration Anaesthesia and Topical Anaesthesia is included as Appendix XXV.

Appendix XXI C sets out a table of tablet sizes which vary in diameter according to the dose of medicament.

The Oil in Water emulsion cream includes the word "Aqueous" in the title and the water in oil cream is entitled "Oily".

Doses

The B.P. 1958 repeats the instruction that the doses quoted are not binding upon prescribers and that "the medical practitioner will exercise his own judgment and act on his own responsibility in respect to the amount of any therapeutic agent he may prescribe or administer or the frequency of its administration. When, however, an unusually large dose appears to have been prescribed, it shall be the duty of the pharmaceutical chemist to satisfy himself that the prescriber's intention has been correctly interpreted."

This statement has been carried forward from the previous edition and it would be a great improvement if this position was clarified by adoption of the convention of the A.P.F., viz.: "that when an unusually large dose or strength is ordered it shall be underlined and initialled by the prescriber."

Doses have become very specific in many cases, e.g., **Dexamphetamine Sulphate**—5-10 mg. morning and mid-day. And very comprehensive in other cases, e.g., **Chloroquine Phosphate**. In the treatment of malaria: Suppressive—0.5G. weekly; therapeutic—initial dose 1G., subsequent doses 0.5G. daily; by intravenous or intramuscular injection—for an adult the equivalent of 0.2-0.3G. of Chloroquine base, for a child the equivalent of 5 mg. of Chloroquine base per Kg. of body-weight. In the treatment of Amoebiasis, 0.5-1G. daily.

In other cases the only direction for dosage may be as follows: **Suxamethonium Bromide**—the dose is determined by the physician in accordance with the needs of the patient.

Surely the B.P. could say "The average single dose for an adult is 30-40 mg. of cation—duration of action averages 3-5 minutes. Doses may be repeated if necessary with little danger of cumulative action." (As does Martindale.)

There are other cases, mainly diagnostic agents, where a statement of the average dose would provide useful information without restricting the prescriber.

"Doses are expressed in the Metric System except for those substances and preparations commonly used or prescribed in the Imperial System."

The range of substances for which no Imperial dose is given is steadily increasing and it is the intention of the B.P. to discontinue the use of Imperial quantities in the next edition. Many commonly used substances, e.g., the Vitamins, the Hormones, the Antibiotics and the Antihistamines, are always prescribed in the Metric doses. It should not be difficult to change dispensing over to Metric and to teach medical students to prescribe in Metric. Liquid preparations would need adjustment to doses of 5 mils, 10 mils and perhaps 20 mils and with provision of suitable measures this should not present any insuperable difficulty. Antibiotic suspensions for internal use which provide a metric measure for the required doses have been marketed and used successfully in spite of lack of familiarity of the patient with these quantities.

Abbreviated Titles

Abbreviated titles of the B.P. are as official as the full English or Latin title and the abbreviations given in this volume present some curious anomalies. In some the English titles have been abbreviated and in others the old Latin abbreviation retained, while Liquid Extract of Liquorice has both abbreviations. Prescriptions may have a new look as the following examples show:

R	Sod. Bicarb	15 gr.
	Nux. Vom. Tinct.	10 m.
	Co. Cardam. Tinct.	10 m.
	Conc. Co. Gent. Inf.	ad 240 m.
R	Ammon. Chlor.	4 gr.
	Ipecac. Tinct.	10 m.
	Camph. Opium Tinct	30 m.
	Liquorice Liq. Ext.	15 m.
	Tolu Syr.	30 m.
	Camph. Water	to 240 m.
R	Sod. Bicarb	15 gr.
	Heavy Mag. Carb.	10 gr.
	Tinct. Zingib. Mit.	5 m.
	Orange Syr.	30 m.
	Aq. Menth. Pip.	ad 240 m.
R	Co. Soda. Bicarb. Tab.	(Soda Mints)

It can be seen that the use of abbreviated titles may present a very unusual appearance.

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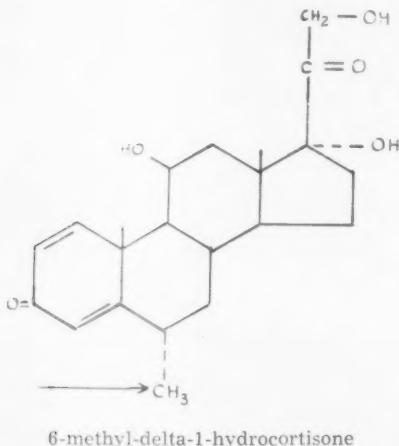
By

Geoff K. Treleaven, Ph.C., F.P.S.

PHARMACEUTICS DEPARTMENT,
VICTORIAN COLLEGE
OF PHARMACY

A New Corticosteroid — METHYLPREDNISOLONE

Methylprednisolone is the 6-methyl derivative of prednisolone. It differs from the latter structurally only in the substitution of a methyl group for a hydrogen atom at the 6 alpha position.



Methylprednisolone exceeds prednisolone in anti-inflammatory potency while having less tendency than prednisolone to cause retention of sodium and water (reduced mineralocorticoid activity).

Indications: The indications for methylprednisolone are the same as those for prednisolone, and comprise the various rheumatic, allergic, dermatological and ocular diseases, etc., responsive to anti-inflammatory corticosteroids.

Contraindications: Methylprednisolone, like prednisolone, is contraindicated in patients with tuberculosis, chronic nephritis, peptic ulcer, acute psychoses, Cushing's syndrome, and herpes simplex keratitis. The presence of diabetes, osteoporosis, chronic psychotic reactions, predisposition to thrombophlebitis, hypertension, and congestive heart failure necessitates carefully controlled use of Methylprednisolone.

Caution: Methylprednisolone like other related corticosteroids may mask signs of infection.

Side Effects: Oedema due to retention of sodium and water is much reduced while the incidence of psychic stimulation and nervousness is less. Epigastric distress, although not completely absent, may be less than with prednisolone.

Usual Dosage: 2-4 mg. three or four times daily.

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The Women's Section

Correspondent: Miss A. K. Anderson

All States are reminded that the Federal Secretary would be pleased to receive remits for the P.A.A. Conference in Adelaide, as soon as possible.

THE WOMEN PHARMACEUTICAL CHEMISTS' ASSOCIATION OF VICTORIA

A large number of members and friends were welcomed by the President, Miss Kath Keogh, at our last general meeting, held at the College, on September 4. Our guest speaker on this occasion was Commander Batterham of the Department of the Navy, who gave a most interesting talk on "Underwater Technique."

Commander Batterham has had 22 years' experience in underwater diving operations, and was one of those in charge of that section in the British Navy during the war. We were told of many interesting incidents that took place prior to D-day, when many of the continental harbours—Antwerp, Hamburg and others had to be cleared of mines before the Allies went in, and of delousing mines, in Gibraltar harbour, and on the bottom of ships anchored in the harbour.

Commander Batterham is now in charge of training men in underwater technique for the Australian Navy at Rushcutters Bay. The men, who are all volunteers, do a 32 weeks course, and are taught to recognise the type of mines underwater and the means to deal with each type. Speed in working is an important factor, as the safety margin is only 11 seconds. In most cases mines can be deloused in 8 seconds.

Commander Batterham told us many amusing stories—one in which an Italian "frogman" was busy planting mines under one end of a ship while a British man was fast delousing them at the other end. Fortunately, the Italian was seen first!

Concluding his talk, the Commander said that the R.A.N. were far ahead of both the British Navy and the United States Navy in underwater technique—so much so that both R.N. and U.S.N. men are often sent to Australia to do the course here.

Before adjourning to the Museum for supper, Commander Batterham was given a sincere vote of thanks for a tremendously interesting talk.

We invite all chemists to attend our October meeting when our guest speaker will be Mr. Eric Westbrook, Director of the National Gallery.

THE WEST AUSTRALIAN WOMEN PHARMACISTS' ASSOCIATION

Our 22nd annual dinner was held at the Hotel Charles on September 10. The President, Mrs. E. Adlard, welcomed the large number of guests and expressed delight at seeing so many young pharmacists present.

The guests of honour were Mrs. R. Cohen, wife of the President of the Pharmaceutical Society, and Mrs. G. Allan, wife of the President of the Pharmaceutical Guild.

A delightful evening was had by all those present, and it gave many old friends an opportunity to exchange news with each other over coffee, which was served informally at separate tables.

Our next meeting, in October, will feature a talk on infant welfare by Sister Craig.

QUEENSLAND ASSOCIATION OF WOMEN PHARMACEUTICAL CHEMISTS

Our August meeting was one of business and pleasure.

We were proud to note that the new Presidential chair, a joint memorial to the late Mrs. Grant and Miss E. Underwood, was used for the first time.

Miss Elizabeth Ann Tomlinson, who has been a conscientious member of our Association for many years, was attending her last meeting before her marriage in September. Miss Elliott presented her with a lovely gift for her new home in Longreach, and conveyed to her our best wishes for her future happiness.

On this happy note members adjourned to tables to participate in various games, the winners of which collected very attractive prizes.

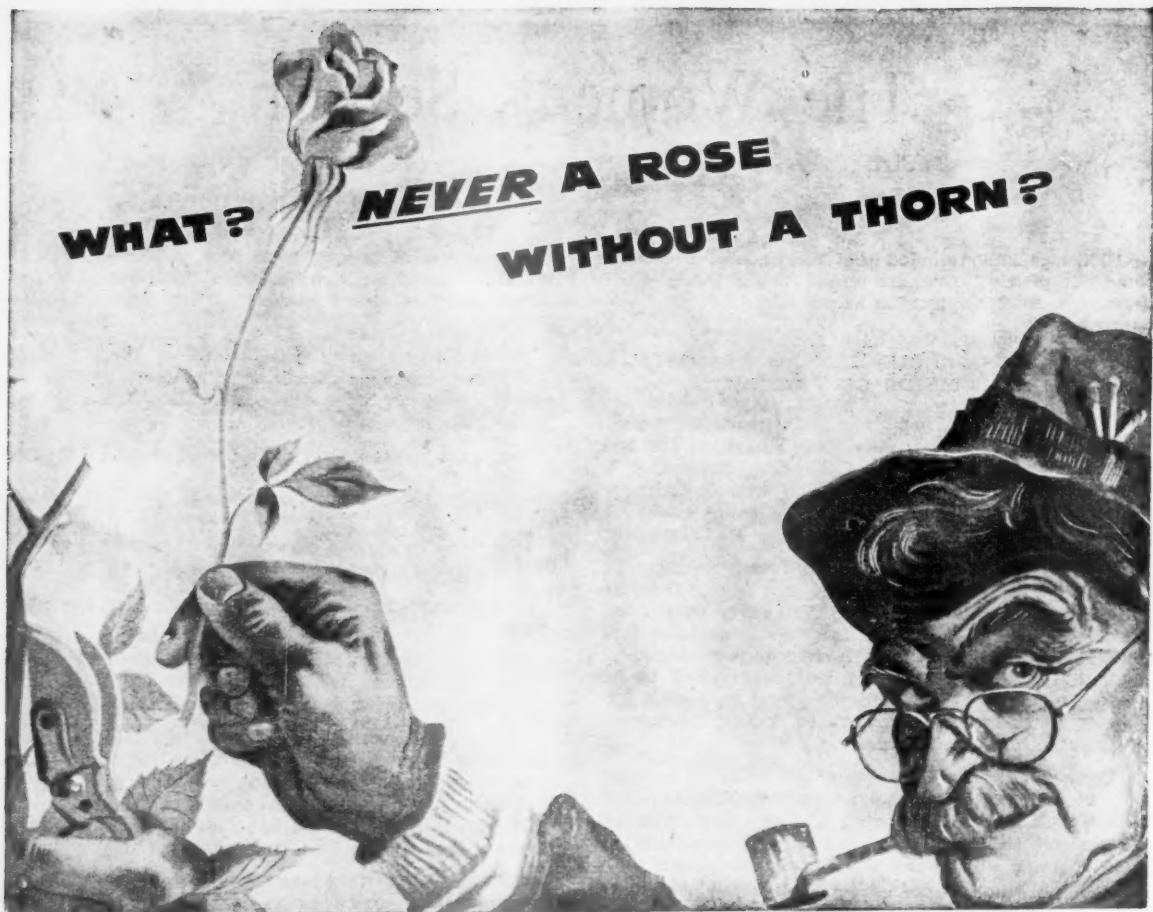
Supper concluded a very happy evening.

WOMEN PHARMACEUTICAL CHEMISTS' ASSOCIATION OF SOUTH AUSTRALIA

The month of August has been a memorable one for the members of the South Australian Association, as they have had the pleasure of meeting many visiting women pharmacists who have been in Adelaide for A.N.Z.A.A.S. The numbers far exceeded our hopes, as we had about 20 qualified women from Queensland, New South Wales, Victoria and Tasmania.

On August 21, the President, Mrs. E. Lester, received the visitors at a dinner held in their honour at the Copper Kettle Restaurant. There were 18 visitors and 18 "locals"—the guests were distinguished by a single camellia at their place at the dinner table. A most pleasant and informal evening was enjoyed by those present, and everyone seemed reluctant to leave.

Our first theatre party was held on September 3. The play chosen was "The Shifting Heart," which was performed in the new Union Theatre of the University of Adelaide. Apart from the pleasure at seeing such a fine play, members were most impressed with the new theatre, which has a seating capacity of 499.



Of all superlatives, "never" is perhaps the most treacherous. Experimental botany has developed thornless roses. Creative research at the Warner Institute has produced a chemically non-reactive and therefore practically non-constipating aluminium hydroxide gel, the basis of "GELUSIL" Antacid Adsorbent Tablets. "GELUSIL" Antacid Adsorbent Tablets offer all the excellent acid-buffering and protective properties of non-absorbable antacids.

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Readers' Views

To the Editor.

These columns are open for the free discussion of any matter of general interest to Pharmacists. Letters under a *nom de plume* may be published; but each correspondent must furnish his name and address as an evidence of good faith. It must be distinctly understood that the opinions expressed by our correspondents are not necessarily endorsed editorially.

COLOURING OF B.P. TABLETS

Sir.—We were very interested in the article by Mr. H. E. R. Barker, B.Sc., F.P.S., entitled "The Pharmacy of the B.P., 1958," which appeared in "The Australasian Journal of Pharmacy," July issue.

However, some confusion may result among chemists if the statement under "Capsules" on page 748 is misinterpreted. It may be construed that the five new capsules (chlortetracycline, diphenhydramine, paramethadione, tetracycline and troxidone) must be uncoloured. As you are doubtless aware, the B.P. 1958 states that the shells of all but troxidone may be coloured.—Yours, etc.,

PARKE, DAVIS, & COMPANY LIMITED.
G. H. Shields, Ph.C.,
Manager, Medical Division.

Caringbah, N.S.W.,
September 17, 1958.

SURVEY OF DRUG CONTROLS

Sir.—I would like to congratulate Mr. A. W. Callister on his excellent Survey of Drug Controls ("A.J.P." August 30, 1958, at p. 854) given as his Presidential address to Section "O" A.N.Z.A.A.S. and which has been read with considerable interest, particularly the section dealing with Uniform Schedules.

In the main Mr. Callister has summed up the position very clearly. There are, however, one or two points concerning which a few observations may not be out of place.

Mr. Callister points out that the cost of maintaining uniformity and constant revision would be very high because of the need for frequent meetings. If the basic principles governing ALL factors were previously agreed upon, frequent meetings should not be necessary—twice a year at the most—as most of the substances would automatically fall into their correct classifications. The Committee would require to meet to consider new factors, revision of basic principles, and deal with borderline cases of classification.

The views of each State authority concerning the matters for consideration should be circulated to all States prior to the meeting. Each State authority should have sufficient faith in the ability of its representative to enable final decisions to be reached, and thus eliminate the cumbersome and time-wasting method Mr. Callister rightly objects to.

Regarding subordination of State rights to Commonwealth direction, there has been no suggestion of this nor will such be necessary. The Commonwealth has given every indication it desires to co-operate with the State authorities in this matter, and direction will come from the representative Committee suggested by Mr. Callister.

There is now no need to consider the alternative procedure suggested by Mr. Callister, for the position has already been reached where all States—except New South Wales, the Poisons Advisory Committee of which has indicated that it could only agree to uniformity if the Schedules and Regulations of that State were adopted

—have agreed to the basic principles and the classification of the substances, with one or two minor exceptions, in their respective schedules.

If the present Federal Committee were reconstituted to embrace representatives of the Federal Health Department and each State Administrative Authority adopting the plan, it could be put into operation immediately the proposed new Poisons Act—a draft of which has been under consideration by the Pharmacy Board for some time—becomes law in Victoria.

Yours, etc.,

A. W. McGIBBONY.

September 23, 1958.

New Books

My Life with the Microbes, by Selman A. Waksman. Robert Hale Ltd., London. Australian price 26/-.

This is the autobiography of one of the pioneers in the field of antibiotics. Dr. Waksman is best known for the discovery of Streptomycin. This was the highlight of many years of detailed research and study in microbiology which eventually brought him the Nobel Prize in Physiology and Medicine in 1952.

This inspiring story is of a boy born in a small village in the Ukraine in 1888, his struggle to obtain a good education at a time when the first stirrings of the revolution were being felt in Russia, his emigration to the United States in 1910, and the eventual success after years of difficult and painstaking work.

Very early in Dr. Waksman's career he showed an active interest in the microorganisms of the soil, particularly the peculiar class known as the Actinomycetes. These organisms when grown on artificial media differed from typical bacteria and typical fungi, often producing characteristic pigments and odours. The young man's interest was stimulated further when he found that his instructors and books could provide very little information about these tiny plants.

The Actinomycetes have fully justified Dr. Waksman's interest in them. As well as several antibiotics, they produce vitamins, notably Vitamin B₁₂, and it is probable that other valuable substances will come from these peculiar micro organisms which had been regarded as obscure laboratory curiosities.

The planned campaign to investigate microbes for antibiotic effect was commenced in 1940. This involved testing of thousands of cultures of microbes on various media under different conditions of cultivation for their ability to produce substances capable of inhibiting pathogenic or non-pathogenic bacteria. About 10 per cent. of these were found to have some potential. And after determining which of these would yield their "active principle" to the substrate, the field was narrowed to only 100 or so cultures. Various methods of extracting the "active principle" were attempted, and about ten active compounds were isolated. These had then to be tested for their therapeutic activity in animals, many proving toxic, inactive *in vitro* or otherwise unsuitable, leaving only one successful agent, Streptomycin.

Within a few months of the discovery of Streptomycin, its effectiveness against several bacteria, particularly the tuberculosis bacillus, was established. Within three years manufacture was fully established, and a rapid reduction in price made the drug almost universally available.

The royalties from the sale of Streptomycin were assigned to the Rutgers University by Dr. Waksman and used to establish a very well equipped Institute of Microbiology of which Dr. Waksman is the director.

As well as the story of this work, Dr. Waksman has written of his personal life, his travels and impressions of countries seen before and after two world wars; the whole book being a detailed autobiography.—D.C.L.

Publications Received

CHEMIST AND DRUGGIST ANNUAL SPECIAL ISSUE OF JUNE 28, 1958

The Annual Special issue of the "Chemist and Druggist," like its forerunners, is a publication in which reading for instruction is pleasurable combined with reading for entertainment.

Probably the article of most immediate practical value is the Tablet Identification Guide. Pharmacists, physicians and police are often required to know what drug a person has been taking. This is often impossible without analysis, but in some instances makers' marks and colours are helpful. Analysts also find charts of this nature of considerable assistance in initial identification.

About 450 different tablets and capsules are reproduced in full colour on these charts. An identification key is provided. The coloured preparations are reproduced actual size; the key to the white tablets and capsules indicates diameter, or in the case of non-circular tablets, both dimensions. Where the two faces of a tablet differ, details of both faces are given, e.g.,

7A—Junior Paynacil. JP on face (reverse halved)
(10mm.) Bencard.

The scope of the chart extends to tablets and capsules identifiable by colour, shape, trade mark or markings other than a specific indication on the tablet as to what it is. The mark must of course be individual to the tablet. If it is common to all the products of a particular manufacturer such products and marks are not included in the chart.

A chart of this nature often provides vital clues in poisoning cases and also on the occasions when a doctor wants to know what a patient has been receiving from sources other than himself (and on some occasions from himself!).

This chart is a supplement to a similar one published in the 1956 Special issue. The publishers can give no guarantee that further supplements will be published and state: "That depends on the future. The new permission given to manufacturers under the British Pharmacopoeia to issue certain tablets in distinctive colours may so multiply the number of coloured tablets that either duplication occurs to such an extent that identification becomes, as with plain white tablets, impossible, or it may render the task so big as to be no longer worth while. Even if that happens the useful life of the present charts will be considerable and they will have fully justified themselves if even one fatality is averted by their use."

While it is not possible to go into detail about each contribution here, the following brief notes will give some impression of the wide variety of material in this special issue.

"Ever Open Door" is an account of activities inside what is claimed to be the largest retail drug store in the world. This pharmacy, located in Montreal, never closes—in fact it has no door—and has a staff of 264 people, a fleet of 52 delivery cars, 32,500 sq. ft. of floor space, five floors and a dispensary 60 feet long.

"Holiday in India" relates the experiences of a pharmacist who decided to spend her annual holiday in India and did—and intends to do so again when funds are adequate.

Pharmaceutical history is admirably represented by two beautifully illustrated articles. The first, which is the story of the development of personal heaters, is entitled "Forerunners of the electric blanket." The second, by Miss Agnes Lothian, concerns "Some English Bell-founders and Their Mortars." The connection between bell-founders and bell-metal mortars is an interesting sidelight on the interdependence of the crafts. Miss Lothian's article is profusely illustrated and makes delightful reading.

"Sterile at the Moment of Use" and "Vitamin C from the Hedgerows" are both articles which may be grouped together with the "Tablet Identification Guide" as being concerned with the strictly professional side of pharmacy.

Other articles of general interest, all of which are satisfying reading, are "An Anonymous Apothecary," by C. G. Drummond; "4000 Years of Infant Feeding," by N. W. Hutchings; "Plague," by F. M. W. Harrison; "Europe as a Market for Pharmaceuticals"; "Botany Rambles on a Grand Scale" and an article by Noel F. Bowman entitled "Design for a College of Pharmacy." Mr. Bowman (the son of a pharmacist) gained his architecture degree with a thesis on a College of Pharmacy—probably a unique subject on which to base an architectural thesis.

The publishers are to be congratulated on once again producing a stimulating annual and for maintaining the high standard set by previous special publications issued by the "Chemist and Druggist."—F.H.B.

ARSENICAL SPRAYS

Information elicited in reply to a question in the House of Commons recently will be of interest to pharmacists. It concerned poisoning by arsenical sprays used in agriculture and the possible connection between these substances and dermatitis and cancer. It transpired that over a five-year period under review only one person had been taken ill after being employed in the spraying of alkaline arsenites. There was one occurrence in which arsenical poisoning had been discovered in seven people who had been picking potatoes soon after the crop had been sprayed with arsenites. There was no evidence or chemical record of cancer or dermatitis that could be attributed to their use.

It also appears that potato plants (just as any other plants) may absorb minute quantities of arsenic, and in some cases arsenic has been detected in the peels of tubers, but never in quantities in excess of the Food Standard limit. The Department, in addition, had no information about the period during which arsenic might be detected in the soil following the spraying with these arsenicals.—"The Irish Chemist and Druggist."

CARE NECESSARY WITH IMPLANTATION OF HORMONES IN SHEEP

It has become somewhat popular to use new scientific methods to increase meat production. Thus, the implantation of hormones has been tried out on both cattle and sheep. It is evident that some care may be necessary when using these products with young sheep, as some unfortunate side effects have been reported.

For example, some four months' lambs were given a hormone implantations of 15 mgms. and over the next month or so suffered loss of condition and disturbance of the breeding organs. The loss of condition was unfortunate, as that was the very thing which the hormones were to prevent. In addition, ewes showed marked udder development and many of them secreted milk whilst there was an enlargement of the external genital organs, and in some of them a prolapse. There were a few deaths in the mob also.

In this particular case the lambs had been grazing on lucerne and had also access to oat and wheaten grain and hay. The lucerne occasionally contains small amounts of an oestrogen similar to the active principle in the hormone and, according to overseas literature, the oats also contains appreciable quantities of this type of substance.

Before considering hormone implantation to increase meat production or to preserve condition, the stockowner should give careful consideration to the type of feed which will be available to sheep during the subsequent month or two so that untoward effects of the nature outlined above will not be shown.

—From "The Agricultural Gazette of N.S.W.", May, 1958.

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1 tablet daily for 4 weeks (28 tablets)
1 tablet alternate days (16 tablets)
Total: 100 tablets

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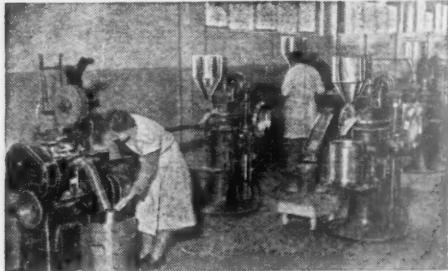
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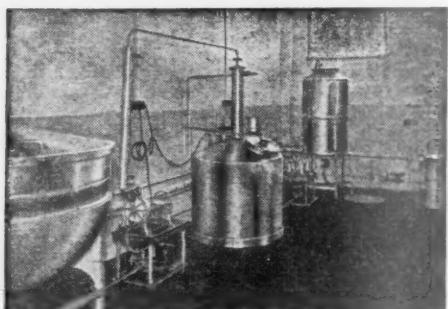
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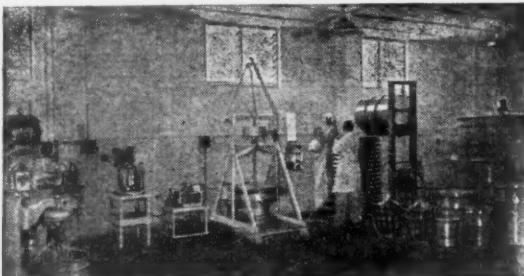
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We will be glad to submit quotations and discuss your manufacturing or packaging problem and advise on formulation or finish.



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Overseas News

GREAT BRITAIN

LONDON, September 10, 1958.

Hidden Profit in the Drug Tariff

The most publicised aspect of pharmacy during the past month has been a statement in the report of the Committee of Public Accounts that a pilot inquiry into actual prices paid by chemists in England and Wales indicated that for 24 out of the 30 drugs concerned the Drug Tariff rates which are paid for N.H.S. dispensing afford a concealed profit averaging 14 per cent. The report points out that chemists who can obtain discounts from list prices make this profit, although the Department had assumed when agreeing the terms of remuneration that no such profit would accrue. The Committee recommended that further inquiries should be speeded up, and they consider that the results already obtained from the same inquiries justified some immediate general reduction in the Drug Tariff. Not unnaturally these statements received wide publicity in the National press.

The Chemist Contractors' Committee, in a memorandum to the press, indicated that no account whatever had been taken by the Committee of Public Accounts of stock losses in storage or in breaking bulk. The prices examined had included the non-proprietary drugs most frequently prescribed, and in many other drugs there was concealed loss. Sir Hugh Linstead, M.P., in a letter to "The Times," stated that, although the Public Accounts Committee was rightly respected inside and outside Parliament, its report illustrated a weakness in working that was not always understood. The Committee was essentially a blunt instrument, a bludgeon rather than a rapier. In procedure it examined only the accounting officers of the departments and comparatively rarely called outside witnesses before it. Persons concerned with contracts had no opportunity of putting their case. In the pharmaceutical field in which he could claim some specialised knowledge, the Committee had from time to time strong things to say about the cost of medicines to the National Health Service. Yet it had never, so far as he was aware, summoned as witnesses before it the manufacturers of these medicines and questioned them at first hand. Another instance occurred in its current report in relation to the remuneration of chemists. There were references to "concealed profits" and to "unintended profits" made by those able to buy at more advantageous prices than those in the official Drug Tariff. The report maintained that "the departments had assumed when agreeing the terms of their remuneration that no such profit would accrue." Even if the Committee were told this in evidence by the departments, one could not understand how the most elementary knowledge of business allowed them to accept and endorse it. To take one example: It was well known that some chemists were at the same time manufacturers, wholesalers and retailers. Was it really suggested that the Ministries and the Treasury had not realised until now that such firms had always been able to obtain drugs at a substantially lower price than the pharmacist with one pharmacy? Any informed witness from outside the departments could have told the Committee what must be almost self-evident—that this situation had been known to and accepted by the Ministries ever since the days of the National Health Insurance Act. It was therefore ungenerous and inaccurate to refer to "concealed profit," as if the chemist was engaged in some underhand transaction. The Public Accounts Committee played a great part in

ensuring Parliamentary control over departmental expenditure. Might he urge his colleagues who served on that Committee to maintain the weight and authority of their reports by making fuller use of their powers to summon witnesses from outside the departments before pronouncing judgment in cases such as these.

Health Statistics

The report of the Ministry of Health for 1957 shows that the Health Service for England and Wales cost £585 million, an increase of £15 million on the previous year and £90 million more than in 1955. The total cost of prescriptions dispensed by chemists in the two countries was £60,851,903 and the average cost per prescription was 5s. 10.48d. The total number of prescriptions for the year under review was approximately 21,600,000 less than for the preceding year, and was the lowest since 1949. The report says that it is interesting that, although certified sickness in October slightly exceeded that in January, 1951, which was the peak of the last severe epidemic of influenza, the number of prescriptions in October was 22,499,410, whereas in January, 1951, it reached the very high figure of 28,917,524. The difference, the report believes, is probably due partly to the 1957 epidemic being of a milder nature, with patients recovering more quickly and fewer cases of complications. The average cost per prescription continued up to and including August to be at a substantially higher level than in the corresponding months of the previous year. In September and October the influenza epidemic had the usual effect of reducing the average cost because of the higher proportion of less expensive preparations which were ordered. Examination of samples of prescriptions at intervals confirmed that the practice of ordering larger quantities continued. The report comments that if doctors are careful to do this only when satisfied that the continuing need for the medicine justifies it, there is no unnecessary expenditure. The cost per prescription was also affected by the fact that prednisone and prednisolone became available generally for the supply on prescription in February of the year under review. Cortisone and hydrocortisone had been available throughout the preceding year. These preparations are expensive, and the therapeutic category which includes them is estimated to have accounted for 9.7 per cent. of the total ingredient cost of prescriptions during the year, as against 5 per cent. in 1956.

Minor Payment Changes

As a result of an inquiry into the actual cost of containers it has been decided to increase the payment for containers to 1.62d. per prescription from 1.55d. The inquiry showed that the average cost per prescription was about 1.508d. in February and June, 1957, and the present increase of 0.07d. reflects adjustments in the price of bottles since then.

Dispensing fees have also been altered to provide an additional fee of 1s. 2d. for each extra quantity of an extemporaneously dispensed liquid preparation when ordered to be supplied in a separate container. As a result each quantity will also qualify for the container allowance. This decision removes one of the chief complaints against the scale of fees introduced in April, as in it the dispensing fee was dependent on the total volume ordered and not on the number of containers.

Cosmetic Sales

Manufacturers' turnover of toilet preparations and perfumes, excluding soaps, dentifrices and shampoos, amounted to around £34 million last year, according to a report published by "Political and Economic Planning." About 25 per cent. was shipped abroad and consumption on the home market was in the neighbourhood of £25.75 million. The survey says that the retailers' mark up was 50 per cent., and with the addition of Purchase Tax, then 90 per cent., the total expenditure by the public was £61.8 million. This was equivalent to almost £3 per year for every woman over the age of 14. It is believed that about three-

quarters of this trade was carried out in chemists' shops. It undoubtedly formed a significant part of the chemist's turnover, and it has been suggested that half the business of many chemists is in toilet preparations. Departmental stores site their perfumery departments near the main entrance, as it makes the entrance brighter, and in addition to its eye appeal it stimulates impulse buying. The standards of salesmanship may be low, but schools sponsored by cosmetic houses have led to some improvement. Three out of four women in the 16 to 64 age group regularly use both face powder and lipstick, and about half use a foundation of vanishing cream. Two out of five use hand cream or lotion, and one in five cleansing or cold cream. Some 25 per cent. purchase deodorants. Over the last ten years there has been an increase in the use of lipstick, and an appreciable rise in the proportion of women using mascara, although it is still only about 10 per cent. Rouge is less frequently used. Cosmetics are used much less frequently by older women, and a high proportion of those over 45 have never used them. It seems that the proportion of older women using them will increase as the generations which have used them all their life reach this age. Teenagers give particular emphasis to make-up, and many of them show considerable taste. The bulk of manufacture is controlled by large firms and a substantial part is in the hands of American-owned companies or their subsidiaries. The differences in price of cosmetics and perfumery are generally attributable to the quality and costs of production. The volume of sales greatly influences costs, and when this large even expensive products in elaborate containers can be marketed at quite reasonable prices, even allowing for advertising.

Examination Requirements

All students registered since March 1 last have been required to take a third-year college course after having passed the preliminary scientific examination of the Society, or obtaining exemption from it. Syllabuses for the new qualifying examination have now been published. Broadly they are drafted in general terms and are intended to ensure that the student will have a good knowledge of the fundamentals of the various subjects without being overburdened with detail. The absence of detail also eliminates the need for the schools to teach out-of-date material because it is in the syllabus. Perhaps the most radical change has been in pharmacognosy, as it is considered that the future of this subject lies in its chemical and pharmacological aspects rather than in the detailed study of histology. New requirements in this subject include the elementary study of the pharmacological aspects of plant protection and a knowledge of the more common indigenous poisonous plants and the antidotes used in poisoning by them. There is a new paper in pharmaceutics taken at the end of the third year, and for the first time candidates will be expected to have a knowledge of the history of pharmacy. In addition, the development, administration and organisation of the general practice of pharmacy, the hospital service and the pharmaceutical industry will form a basis for questioning. The subject now known as forensic pharmacy will be included in this paper, and a knowledge of professional conduct, relationships and liabilities will also be required. Medical gases, inhalation equipment, surgical dressings, medical and surgical appliances appear for the first time, and for Pharmaceutics II the syllabus includes radio-active isotopes and the health hazards in handling, storing, dispensing, dosage and waste disposal of these preparations.

Welcome Publicity

Some publicity of a welcome nature appeared in the "Manchester Guardian", a national newspaper which is renowned for objective reporting, when its industrial staff told the public how pharmacists and manufacturers must build up their stocks many months ahead. It is stated that the industry, "while naturally seeking to make

a profit like any other business, is fully aware of its responsibilities and obligations to the public, and regards the duty of meeting these as a question of ethics". In a lighter vein it is suggested that between September and Easter the public will drink enough cough and cold remedies to fill at least half-a-dozen big municipal swimming baths, and will swallow aspirins and compound codeine tablets by the thousand million. Last year the Asian influenza epidemic caused half a winter's stocks to be used in less than a month. To prepare these materials it is necessary for the manufacturers to organise a packing programme for the summer months and to ensure that packing materials will be available. Delivery periods are difficult, bottles take six weeks for white, and eight to 10 for amber-tinted. Labels may take a similar time, and plastic caps and cartons may take 12 weeks, while printed tins need around 16. The article concluded with stating that the constituents of many medicines are better for maturing.

Treatment of Ringworm

The possibility of treating ringworm orally by means of an antibiotic is foreshadowed in an article in "Nature". Griseofulvin, an antibiotic with markedly fungistatic activity, gave good results when given orally to guinea-pigs. Daily administration of the antibiotic in a dose of 60 mgm. per kilo body-weight, was started 10 days after infecting them with *Microsporum canis*; unmedicated tablets were given to control animals. The beneficial effect of treatment became evident after four days. Histological examination showed that, by the eighth treatment, infected follicles were present very infrequently; in the untreated group, skin sections at that time were heavily invaded with the dermatophyte. Griseofulvin proved similarly effective when given orally to guinea-pigs experimentally infected with *Trichophyton mentagrophytes*, and for experimental ringworm in cattle.

Commission and Approved Names

The British Pharmacopoeia Commission has issued a rebuttal of the statement made by the Hinchliffe Committee on the Cost of Prescribing regarding its selection of Approved Names. The Commission point out that provision for an Approved Name has in the majority of cases no effect on the price of the preparation. The statement by the Hinchliffe Committee that the present rules of nomenclature require that the Approved Name should be based on the chemical constitution is erroneous. The guiding principles do not impose any inflexible style and many names are not based on the chemical constitution. Among the guiding principles are the following:

"An attempt should first be made to form a name by the combination of letters or syllables from the systematic chemical name.

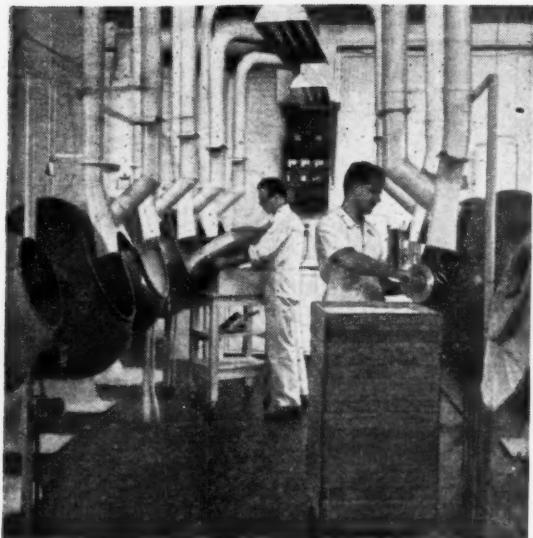
"Cognisance should be taken of the names of closely related substances and where desirable the name should reflect its relationship.

"The names should be distinctive in sound and spelling and should not be liable to confusion with names already in use.

"Names which are difficult to pronounce or remember should be avoided.

"Names used in the United States Pharmacopoeia, New and Non-official Remedies (Drugs and International Non-proprietary Names), should receive preferential consideration."

It is exceptional for a long period to elapse between the appearance of a new drug and the publication of an Approved Name. Approved names for new drugs of British origin are usually available at the same time the drug is placed on sale, and manufacturers in practice approach the Commission for an Approved Name before placing a drug on the market. It is not part of the Commission's functions to advertise Approved Names, but copies of the Supplementary Lists of Approved Names are widely distributed at home and abroad. It is also pointed out that the Commission has no control over the manner in which Approved Names are used by manufacturers, or labels and advertising literature.



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1 1/9 on family size
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PUT MORE PROFIT IN YOUR POCKET — WITH PEARS BABY POWDER !

Trade Notes

B.C.M.P. TABLETS

G.P. Pty. Ltd. has announced the release of B.C.M.P. Tablets, a new addition to its range of Ethical Specialty products.

B.C.M.P. Tablets contain $\frac{1}{4}$ gr. Phenobarbitone in combination with essential Vitamin B-Complex and Minerals for conditions where long term sedation is required in conjunction with metabolic stimulation as in hypertension, cardio-vascular disorders, menopausal symptoms, dysmenorrhoea, hyperthyroidism and during periods of emotional strain.

B.C.M.P. Tablets can be sold only on prescription.

Pack and price are as follows:—

Bottles of 100 tablets. Wholesale: 13/4 each. Retail: 20/- each (plus dispensing fee).

Stocks are available from all wholesalers throughout Australia.

ANIMAL HEALTH NIGHT AT SIGMA

Over 100 chemists and members of their staff attended the Sigma Animal Health Division "Open House" Night on August 28.

The purpose of the evening was to present to city and suburban chemists the potential market available in the small animal field, as well as to describe disease conditions commonly encountered by the pet owner.

Mr. B. King—Sigma's Sales Manager—presided over the meeting, and talks given by Mr. C. G. Scarff, B.A.Sc., Mr. P. G. D. Rudduck, B.V.Sc., and Mr. M. McGinnis covered many aspects of small animal diseases and the merchandising, through pharmacy, of small animal medicines and accessories.

Films and slides were shown, and illuminated product displays indicated the wide range of animal health preparations, instruments and accessories carried by the company to meet chemists' requirements.

At the conclusion of the meeting, supper was served and general discussion followed.

THE WHOLESALE DRUG CO. LTD.

Annual Meeting

At the recent Annual General Meeting of members of The Wholesale Drug Company Ltd., Mr. N. V. Orr announced his retirement as Chairman of the Board of Directors. He will continue to act as a Director. Mr. Orr has been a Director of the company for 21 years, during which time he was Treasurer for six years and Chairman for six and a half years.

During his association with the Board, Mr. Orr has seen tremendous growth in the company's activities, and in his address to members he paid tribute to the work of the General Manager, Mr. R. E. Gostelow, who had successfully managed the company during the period of its greatest expansion.

At the first meeting of the Board of Directors after the Annual Meeting, Mr. C. G. Gostelow was elected Chairman of the Board, and Mr. G. R. Mallam, Treasurer. Apart from their association with The Wholesale Drug Co. Ltd., each of the above gentlemen is connected with official pharmacy and, over the years, has given freely of his time, energy and business experience in the furtherance of his calling.

CALIFORNIAN POPPY 40's PACK BACK AGAIN

It was announced during a special national Californian Poppy selling conference just concluded in Sydney, that the 1958 Californian Poppy 40's Bonus Pack would be offered to the trade through wholesalers, commencing the first weeks of October.

This promotion offers, in addition to the normal margin on the product, four bottles of Californian Poppy free with every parcel order of 3 dozen standard size bottles, giving a profit of £2/2/3 on an outlay of 72/- per parcel.

A special feature of this year's 40's pack will be the inclusion of a completely assembled colour printed display unit containing ten bottles, which has been designed to tie-in with the theme of the saturation spot radio campaign which has just commenced over 78 stations in Australia at the rate of 738 spots per month.

Mr. W. S. Yates, General Sales Manager of the J. & E. Atkinson Company, stated that production of the 40 Bonus Pack was proceeding at full capacity, but because of the already heavy demand for the pack he suggested that the trade place their orders through wholesalers immediately to avoid delays in getting this attractive bonus.



BOOTS' NEW RESEARCH BLOCK AT NOTTINGHAM

The accompanying illustration is an artist's impression of the new Boots Research Block in the City of Nottingham, England, which is to cost approximately £1,000,000, and is scheduled for completion early in 1959.

This new, highly functional unit of the research organisation of Boots Pure Drug Co. Ltd., is in fact "a building wrapped round laboratories." The laboratories,



Boots' New Research Block at Nottingham—
an artist's impression

two dozen in all, form the core and motive of the building's existence, for in them scientists will work on projects which may affect the everyday lives of millions. Diverse ailments such as tuberculosis, rheumatism, and the sleeping sickness which attacks cattle in Central Africa will be particular subjects of research.

The building will be fully air-conditioned and will

consist of three sections, the main block comprising the group of laboratories. Another wing will contain offices, library and a lecture theatre seating 200 people. Joining these administrative and laboratory sections there will be a stairway and cloak room section, distinguished by a vast single window 60 ft. high and 24 ft. wide.

An unusual and highly efficient feature of this research block is the 3½ ft. ceiling-to-floor thickness between each of the eight stories. This will allow all services such as water, gas, compressed air, steam and vacuum pipes to be brought to any point neatly, easily and unobtrusively.

VARIDASE BUCCAL TABLETS INTRODUCED BY LEDERLE

A buccal tablet form of varidase streptokinase streptodornase which reduces inflammation and swelling due to trauma or infection has been introduced by Lederle Laboratories Division, American Cyanamid Company. Buccal Varidase is an enzyme product which, it is claimed, provides a readily acceptable dosage form to patients and is used in the treatment of abscesses, burns, cellulitis, edema, hematoma, uveitis, sinusitis, chronic bronchitis, chronic bronchiectasis, thrombophlebitis and leg ulcers.

The new mint-flavoured product is allowed to dissolve in the patient's mouth and is absorbed into the body. Unlike the injectable form, Varidase Buccal does not require refrigeration.

Varidase Buccal acts, as does the parenteral form of Varidase, to activate a body process which helps dissolve fibrin deposits in areas inflamed as a result of infection or trauma and also reduce swelling, pain and discomfort. Where infection exists or may be expected, Varidase Buccal is used in conjunction with an appropriate antibiotic such as achromycin tetracycline.

Since Varidase acts through the blood stream, it is effective in remote inflammations or infections.

The new product was recently employed in the treatment of 62 conditions in 57 patients by Dr. Joseph M. Miller and associates of the Veterans' Administration Hospital, Fort Howard, Maryland, U.S.A. Reporting in the February 1 issue of the "Journal of the American Medical Association," they indicated that 55 conditions such as abscess, cellulitis, edema and thrombophlebitis responded excellently to buccal treatment while only three results had to be classified as poor. All patients were treated concurrently with antibiotics.

The usual dosage of Varidase Buccal is one tablet, four times daily for a minimum of three days, under the guidance of a physician. The average course of therapy is five days and dosage for as long as several weeks may be necessary in certain chronic conditions. Since Varidase is inactivated by the gastric juices, the tablets should not be chewed or swallowed.

Ease of administration of the buccal form is expected to increase the usefulness of Varidase to the general practitioner. Because Varidase has been found most effective when administered several times daily, the injectable form has been used primarily in hospitals.

Clinical trials with Varidase Buccal to date have indicated a lack of mucosal irritations and an absence of side effects including allergic manifestations.

Each Varidase Buccal tablet contains 10,000 units of streptokinase and 2500 units of streptodornase. The product is supplied in bottles of 24 tablets.

C.S.R. MATERIAL IN PHARMACY

Few shops are more difficult to design than chemist shops. To sell cosmetics and pharmaceutical goods it is necessary to display a large number of small packages and bottles of varying sizes, not always attractive in

themselves. They must all be in full view of the customer, and sales aids such as printed notes and counter displays must also be displayed. All this can easily lead to confusion and untidiness. Yet many very attractive and interesting chemist shops have been built in the last few years.

A particularly good example is Mr. H. S. Price's pharmacy at the Kuring-gai Council's new shopping centre in West Pymble, N.S.W. An appearance of order and neatness is achieved by the repetition of standardised floor and wall units which line both long walls. The display shelves are made of natural timber; seldom-needed goods are stored behind striated plywood doors which form a continuous strip of dark green and white under the ceiling.



Timbrock (reverse side showing) ceiling and rear wall

Generally in the shopping centre ceilings follow the roof slope and are lined with Cane-ite for heat insulation. In the chemist shop, however, a flat ceiling of Timbrock with the reverse side showing was suspended below this. Painted white, and with the slight texture of the Timbrock screen side showing, the ceiling is an attractive feature of the whole shop. Flush light fittings are incorporated.

Brighter colours are provided by the rear wall of dark red Timbrock and by the multi-coloured lino tile floor. The prescription counter, surrounded by walls of polished wood and white Timbrock and with a lowered ceiling forms a separate unit within the whole shop.

A welcome addition is the built-in seat for waiting near this counter.

P.A.T.A. OF N.S.W.

Notified 19/9/58—

Chemists' Section—Addition

Bristol-Myers Company Pty. Ltd.

Size		Wholesale
No. 4	Retail Under 3 doz. Ipana Tooth	36/6 doz.
Family	5/- 3 doz. lots Paste	35/5 doz.

Initial orders booked by manufacturer carry 3 free with 3 doz.

By direction of the Council of the P.A.T.A. of N.S.W.—expunged from the Protected List.

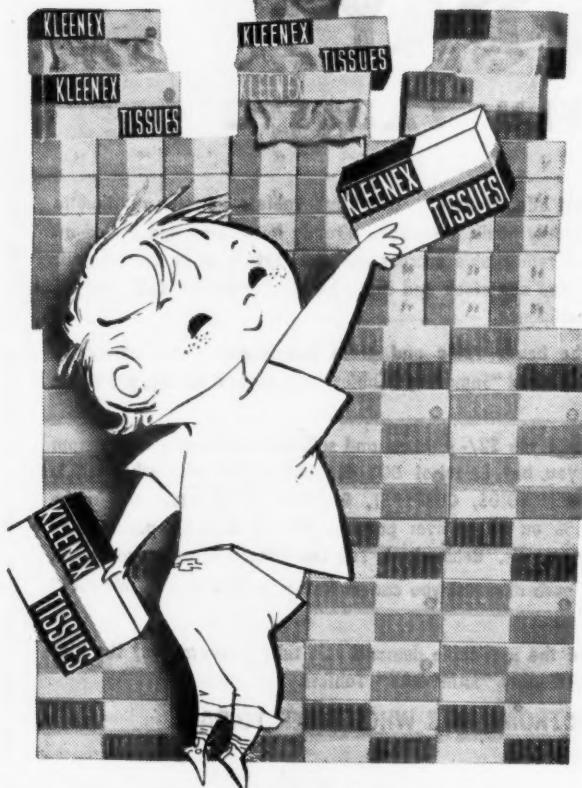
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KLEENEX
in colours!

*New colour—new profit
for your Sun Centre*

KLEENEX* TISSUES



This is what chemists are saying . . .

Mr. Pinerua, of Balmain, Sydney, says — "Sales of Kleenex tissues have increased beyond all expectations since I started displaying Kleenex prominently on the eye-catching Sneezin' Season Bar."



Mr. S. Grandofo, of Black Rock, Victoria, says — "Because of the tremendous volume of sales that came from the Sneezin' Season Bar, I have kept it a permanent feature of my pharmacy. Since it was first introduced, sales of Kleenex have more than trebled and are still increasing."



KLEENEX TISSUES: 3/9 size in aqua and pink and white

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Student Activities

NATIONAL ASSOCIATION OF PHARMACEUTICAL STUDENTS OF AUSTRALIA

The N.A.P.S.A. survey forms will soon be received by the State organisations to be distributed to the students. The Executive expects that all students will realise the necessity to complete these survey forms truthfully and carefully; otherwise the result will be useless. Much time is spent in the preparing of this survey and in the correlation of the results, apart from the expense of the forms which comes from the N.A.P.S.A. funds. Unless the forms are correctly filled the Guild cannot act on the results.

THE INTERNATIONAL STUDENTS' FEDERATION

The I.P.S.F. was established on August 25, 1949, when, upon the proposal of the British Pharmaceutical Students' Association, 24 students from eight countries gathered in London with the idea of creating an organisation which would unite existing pharmaceutical groups and assist in creating other national student bodies where such did not already exist. The I.P.S.F. then, was created primarily by pharmacy students who could see the benefits of a unifying association. Their organising was fostered by the Federation Internationale Pharmaceutique, and since then this parent organisation has constantly supported the work of I.P.S.F.

In 1949 the I.P.S.F. set as its basic objective the study and promotion of interests of pharmaceutical students and the encouragement of international co-operation amongst students. To do this it proposed to hold annual meetings of pharmaceutical students, to promote a scheme of student exchange, to study pharmaceutical education, and to provide news of its activities and of the activities of member societies through the I.P.S.F. Bulletin. These aims have all been realised to a certain extent, but each annual meeting evokes new projects and deliberations.

Annual Camp and Study Tours

During the summer months of each year the I.P.S.F. holds a camp. These international gatherings of pharmacy students are usually of eight to ten days duration. Meetings are held in a different country each year with the object of providing pharmacy students with an opportunity of visiting a country and gaining a knowledge of the cultural and pharmaceutical life of that country. During the camp general meetings, symposia, council meetings, social programmes and excursions are enjoyed and all these, including accommodation, are carefully arranged to come well within the students' means.

The Bulletin

The I.P.S.F. Bulletin is published at intervals throughout the year and serves as a link between the Federation and its members—indeed, it serves to unite all pharmaceutical students throughout the world by bringing news of other countries and their students. The Bulletin also provides the details of I.P.S.F. meetings and outlines the Federation's plans for the future.

Student Exchange

One of the most significant ways in which I.P.S.F. pursues its object of "promoting the interests of and the international co-operation between pharmacy students" is through student exchange. By visits of students of one country to another, the I.P.S.F. hopes to promote and exchange the ideas between countries.

This latter aim, the fostering of amity between nations' students, has great significance. In this world, where rapid and less costly means of transportation have suddenly made many nations new neighbours, the necessity of creating goodwill, co-operation and, above all, understanding, among them has been realised. It is therefore encouraging to observe that within our own

profession the student can now work with those objectives in view. Working through I.P.S.F. towards these intangible and often unrecognised ideals the student prepares himself for some of the more important tasks which are his as a graduate practising pharmacist. It is the present-day student who will ultimately be concerned with the problems of our national bodies, and it is he who will be participating in the scarcely touched projects and deliberations of our international organisations.

Our own National Association of Pharmaceutical Students of Australia, representing almost 2000 students, is proud to be associated with, and to be a full member of, such an active and comprehensive organisation.

LORY LIGHTFOOT,
International Vice-President of N.A.P.S.

ADELAIDE UNIVERSITY PHARMACEUTICAL ASSOCIATION

As forecast in the last report, A.U.P.S.A. have had a busy second term both with mid-year exams and social events. The annual car rally was a combined event with the Uni Car Club, and under the direction of Fraser McWaters, 58 cars set off for the all-day trial through the Lofty Ranges. The first section saw at least all of the cars passing over the other half—but in the opposite direction. However, after renewed efforts at map reading by navigators all cars eventually arrived at the Gorge Kiosk for lunch. Several "horror" sections over bumpy roads in the afternoon made many passengers who had taken liquid refreshments with lunch feel "all shook up," but 48 cars arrived at Silver Lake, Mylor, for a barbecue and dance. Many students who did not participate in the final met the survivors and nearly 160 people recovered in the accepted pharmaceutical tradition.

The annual dinner was held at the Southern Cross Hotel in the city on July 24. The numbers at our dinners are breaking records consistently, and this year we had a total attendance of 120—including guests. Messrs. Porter, Bowey, Penhall and Prof. Jordan responded to the various toasts, and Mr. Bowey, who lectured in the department until this year, was presented with crystal glasses and an engraved tray in recognition of his services for the students.

The evening wound up with short speeches by "Tiger" Lipsham and Mr. Ron Anderson, who recently returned from America.

Movies of the U.S.A., which were taken by a local chemist on his recent visit abroad, were then shown.

Our mass blood donation week was very successful with over 70 students volunteering after some persuasion and publicity over the radio and in the press. As quoted from the "Tincture Press," the success was due mainly to (a) the nurses, and (b) the after-donating beverage, and it is rumoured that several of our number are not waiting three months before their next visit to the blood bank—but only as far as the nurses' exit gate.

TASMANIAN PHARMACY STUDENTS' ASSOCIATION

Now that the end-of-year exams are getting close, life is becoming a little quieter on the Tasmanian front. For all that, in the last two months we have enjoyed a number of "dos" of different types.

T.P.S.A. took part in N.A.P.S.A.'s Blood Donation Week in July. Thirty students attended the blood bank in Hobart, and 26 were enrolled as donors. Everything proceeded smoothly—apparently no one suffered any ill-effects judging by the number of familiar faces seen at the "Tatler" and "Manhattan" later in the evening. The Tasmanian Division of Red Cross was very favourably impressed by the move, and T.P.S.A. hopes to make a mass donation annually.

The sporting event of the year was the football match played between masters and students at New Norfolk on July 6. The general opinion was that the masters' win was due to the number of footballers imported from

Launceston for the occasion, the great assistance given by the umpire, and the students' generous respect for the aged. Nevertheless, they did win . . . Sorrows were soon drowned when players and spectators adjourned to the nearest licensed premises for lunch, etc. Later in the afternoon, some of the party went on to the Salmon Ponds. Since everyone enjoyed the outing, we hope to make this a yearly event, too.

On July 20 the third trip took place. With the weather on our side for a change, six car-loads set out, bound for Mt. Field National Park. Trouble and disappointment beset us on the way up—trouble in the form of a temperamental water pump in Car No. 2, and disappointment when it was found that the licensee of the "Star and Garter" was still in bed. We eventually arrived at Russell Falls, where the shutter bugs set to work in traditional style. Lunch was consumed, and some much-needed lubrication obtained before setting out on the long road to Lake Robson. This was iced over. Snow was plentiful, both on the ground and in the air, but the casualty rate was low. We had tea at Russell Falls on the way back, then returned to town—except a few, who stayed for supper.

The highlight of this year's activities—the fashion parade—was held at Highfield Hotel on August 25. Although the weather was bad, a capacity crowd of nearly 200 attended, and saw a selection of spring fashions ranging from beach outfits to cocktail wear paraded by seven attractive models. Local wholesalers donated prizes for a raffle, and Mr. Hill, proprietor of Highfield, organised a "Dutch auction," for which he donated the prize. The committee are very happy, as the financial result was most pleasing. This will help pay expenses for congress delegates in January.

SYDNEY UNIVERSITY PHARMACEUTICAL STUDENTS' ASSOCIATION

This month saw exams, holidays and swotting for the final burst. However, just to show we are not all swotters all the time, S.U.P.A. has arranged a few functions. Firstly, the B.W. and P.D. visits loom up early in the term. So many went, that two trips to each factory were arranged.

A barbecue on September 21 in the Sydney University Oval grounds, and a lecture on "Antibiotics—Their Use and Abuse" by a very well-informed doctor were other functions this month.

Items to be held in the future are the Mat. Med. dinner—a night never forgotten, and the Christmas dance.

It will be a busy future all round and (with a little study, of course) a most enjoyable one.

VICTORIAN PHARMACY STUDENTS' ASSOCIATION

On August 15 the Museum once again became the scene of the end of term dance. Everyone enjoyed the music of Ron Sandler's band. These dances have proved very popular and have been well attended over the last few years.

On August 17 the annual snow picnic was held. Two van loads of enthusiastic students set out; but owing to the fact that there was no snow and Mt. Donna Buang was a quagmire, we stayed at Warburton and spent the afternoon hiking. The rain stopped long enough for a barbecue tea before we returned home. It was very pleasing to see so many first-yearites present. Keep it up next year!

On Monday, September 1, the annual pharmacy ball was held at the St. Kilda Town Hall. John Ross and Geoff Sussman presented a hilarious revue, Mist ad Tussem. Special guests for the evening were Dr. Cunningham Dax, Director of Mental Hygiene, and Mrs. Dax.

After the follies the dance floor was once again packed and it all seemed to end too soon. Although nobody was at college in a dinner suit, some people only just made it.

Next event, apart from exams, will be a golf day at Macedon.

—Margaret Whittle, National Publicity Officer,
21 Beatrice road, Dalkeith, W.A.

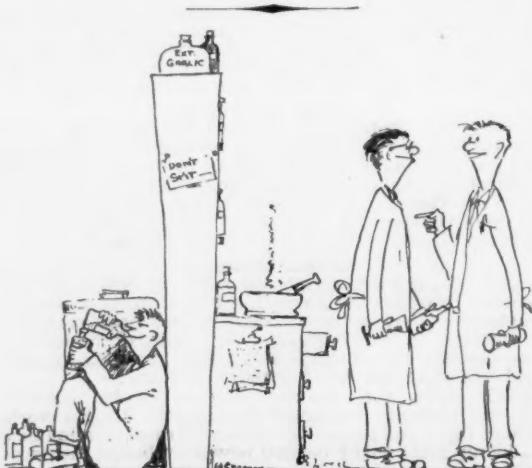
SCIENCE IN THE SCHOOLS

The British Association recently called a conference in London to consider "Science in Schools." It was fully reported in *Nature*, May 17, 1958.

From the report we abstract the contribution of Sir Eric James, high master of Manchester Grammar School.

Sir Eric said: "Science is no longer a specialised study, since it now influences the whole of human activity: it is raising our material standard of life, it is affecting the organisation of society, it enters into economic and political issues, and it has shaken the foundations of philosophical thought and religious belief; and the scientist finds his spiritual satisfaction in its pursuit. It follows that science must now be a 'core' subject in the curriculum, as are English and mathematics, and that every child should do a course of elementary physics, chemistry and biology in the first five years of his secondary school course up to the standard of the Ordinary Level of the General Certificate of Education. The present condemnation of over-specialisation is to some extent misguided, but what is to be condemned is the practice of early specialisation, which means that some pupils give up science two or three years before they get to the sixth form.

When they reach the sixth form, those who want to become scientists will rightly spend most of their time on science subjects, including mathematics, but in view of the fact that scientists will have an increasing responsibility for shaping policy in industry and in Parliament, it is necessary that they should continue the study of English, history and a foreign language. It is equally important that those who elect to specialise in the humanities should continue the study of science in the sixth form. The elementary formal science that they have already learned should be supplemented by a course designed to teach the aim and method of science and its social implications. Such pupils will afterwards be better able to understand and work with scientists. We have much to learn about the most suitable course for specialists in the humanities, but these ends can perhaps best be attained by an account of the aim and method of science, illustrated by a rigorous treatment of the development of one or two of the great scientific generalisations. There should also be a less rigorous treatment of some of the recent developments of science such as atomic energy, modern theories of valency and antibiotics. But the limiting factor in achieving all this is an adequate supply of teachers of good quality.



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Commonwealth and State News

QUEENSLAND

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in Queensland, Miss D. Brighouse, 'phone B 8407.

Mr. A. J. Nucifora, formerly of Ingham, has purchased the pharmacy conducted for many years by Mr. J. C. Wheeler, at Brunswick street, New Farm.

Mr. N. C. Caris, who has been in business at Murwillumbah for some years, has sold his pharmacy in that town and has opened a pharmacy at 629 Stanley street, Woolloongabba.

Mr. A. J. Shaw, of Cairns, has opened a branch pharmacy at Broadbeach, South Coast, with **Miss Marie Kelly** as manageress.

Mrs. M. R. Grant (nee Millar) has sold her Woody Point pharmacy to **Mr. T. A. White**.

Mr. R. J. Nance has opened a second branch pharmacy at Bennetts road, Coorparoo.

QUEENSLAND CHEMISTS' GOLF CLUB

Top laurels at the Virginia outing were taken by Len Fogg in "A" grade, Pat Seeney in "B" grade, Margaret Summersgill and Mance Lyne in the 4 ball event.

The women's 18 hole event was won by Beryl Thompson on a draw from Margaret Summersgill.

Norm Svendson won the nearest the pin competition and Ian Brusasco was the best putter of the day.

The club will hold its next outing at Nudgee Golf Links, this being the second last meeting for the season. A special call to all chemist golfers to come along to Nudgee on October 12.

Australian Chemists' Golf Carnival.—The 1959 Inter-state Carnival will be held in Melbourne from February 22-27. Accommodation will be at the Chevron Hotel and the best golf courses have already been booked.

PROFITS ON MEDICINES

Mr. Donald (Bremer) asked in the Legislative Assembly on August 20, if in view of certain allegations made last year by "Truth" newspaper about profits on medicines dispensed by chemists, investigation had been completed.

In reply, the Hon. A. W. Munro said:

"(1) Certain investigations relative to this matter have been completed and others are in progress from time to time in conformity with the implementation of Government policy.

"(2) No. With reference to the matter of chemists' charges generally, I may add, for the information of the Honourable Member, that this matter was considered by the Prices Advisory Board, and in a report to me of November 25, 1957, the opinion was expressed that drugs and chemicals and pharmaceutical prescriptions should be brought back under Price Control. Following on a consideration of this report, I arranged for the Pharmaceutical Service Guild to be called upon to show cause why the control should not be reintroduced. Subsequently, more detailed investigations took place and

after discussions with representatives of the Guild, certain modifications were made in the charges operating from May 1, 1958. Having in view these modifications and the nature of the skilled and responsible services involved, it was decided that reintroduction of Price Control on these goods and services was not justified. It was made clear to the Guild that this decision is not to be construed as limiting in any way action the Government might take at some subsequent date if at any time recontrol is found to be necessary or desirable in the public interest."

NEW GUILD OFFICE-BEARERS

Mr. C. A. Nichol, 189 George street, Brisbane, has been elected State President of the Queensland Branch of the Guild in succession to Mr. W. A. Lenehan, who did not seek re-election.



Mr. C. A. Nichol, newly elected President of the Queensland S.B.C. of the Guild

Mr. Nichol attended the Ipswich Grammar School for his secondary education, and was apprenticed to the late Mr. J. Cameron at the F.S. Dispensary, Ipswich.

On qualifying in May, 1930, Mr. Nichol undertook relieving positions in various pharmacies throughout the State. For two years he managed the pharmacy at Toogoolawah for the late Mr. M. J. Martin.

Mr. Nichol's first pharmacy was at Proston. While there he was also president of the local Chamber of Commerce for two years.

In 1943 Mr. Nichol came to Brisbane and was manager of the George street branch of the B.A.F.S. Eighteen months later he purchased the pharmacy of the late Mr. W. H. Ockleford at 9 Adelaide street, Brisbane. At

QUEENSLAND—Continued

the present time he is conducting his own pharmacy at 189 George street, Brisbane.

Since becoming a master pharmacist Mr. Nichol has taken a keen and active interest in Guild affairs. He has been a member of the State Branch Committee since 1946, and for the past eight years has been Vice-President of this Branch. During this period Mr. Nichol has been a delegate from this Branch to meetings of the Guild Federal Council, and in company with other Guild Executives, has undertaken visits to Guild Zones throughout the State. For the past seven years Mr. Nichol has been the Guild representative to the Pharmacy Board of Queensland.

For relaxation he enjoys a game of bowls at the St. Lucia club.

Good wishes are extended to Mr. Nichol for a very happy and successful term of office.

Congratulations are offered to **Mr. A. W. Eberhardt**, East Brisbane, on his election as Vice-President of the Queensland Branch of the Guild, and to **Mr. A. Bell**, Greenslopes, who has been appointed State Treasurer.

PHARMACEUTICAL SOCIETY

Council Meeting

The Council of the Pharmaceutical Society of Queensland met at Drysdale Chambers, 4 Wickham street, Brisbane, on September 11, at 8 p.m.

Attendance: Mr. L. A. Stevens (President), Miss Chalmers, Miss Elliot, Messrs. G. R. Wells, B. Page, A. B. Gainford, I. M. Young, J. E. McCaskie, R. V. S. Martin, and the Secretary.

Correspondence: Telegram of congratulations and good wishes to Mr. M. J. Greig on attaining his centenary.

Copy of Life Membership Certificate Which Has Been Prepared for Presentation to Mr. Greig.—The Secretary reported Mr. R. S. F. Greig telephoned and asked that his sincere appreciation be conveyed to the Council for having granted him this honour.

The Secretary reported having telephoned Mr. Greig and asked him to continue to represent this Society on the Board of the Journal Publishing Company.

From Mrs. Barnett, expressing appreciation for the Council's good wishes and the beautiful flowers which were sent to her while she was in hospital.

From the Pharmaceutical Society of Great Britain, furnishing advice concerning publications which are required for the Society's Fellowship Course.

From Regional Director, Department of Labour and National Service, attaching copies of career pamphlet dealing with pharmacy, which is compiled by the Department for the information and guidance of youth.—Mr. Stevens reported that the Secretary had forwarded him a copy for perusal. He thought it was a very good booklet. The only thing that he noticed omitted was any reference to the F.P.S. Course in this State.

On the motion of Mr. Wells, seconded by Miss Chalmers, it was resolved that the Regional Director, Department of Labour and National Service, be thanked for making copies of this publication available, and his attention be drawn to the fact that a Fellowship Course of the Society is now available in this State through the University of Queensland.

Amendments to Poisons Regulations received from the Pharmaceutical Society of Great Britain.

New Members Elected.—

Full Members: Messrs. P. L. Hickey, New Farm, and C. M. Lawton, Graceville.

Associate Members: Messrs. D. J. Halberstater, D. A. E. Cunningham, R. C. Rao, and D. S. Joyce.

Reports on Journals.—Miss Chalmers reported on the current issue of the "A.J.P." and Miss Elliot on recent British medical journals.

Pharmacy Board.—Mr. Martin reported on matters which had been discussed at the last meeting of the Board.

Attendance at Annual Meeting of the British Medical Association.—The President reported that he had represented the Society at the annual meeting of the Queensland branch of the British Medical Association, when Sir Arthur Fadden was guest speaker.

Congratulations to Guild President.—Mr. Wells referred to the fact that Mr. C. A. Nichol had been elected President of the Guild in place of Mr. Lenehan, who did not seek re-election. He had much pleasure in moving that the congratulations and good wishes of the Council be extended to Mr. Nichol in his new appointment. Seconded by Mr. Gainford. Carried.

Christmas Function.—It was felt at this stage a tentative booking should be made for the annual Christmas function. Members referred to the pleasant gathering which was held at Mt. Coot-tha for last year's function, and after discussion Mr. Wells agreed to make a tentative booking for the Society's Christmas party, to be held this year on Tuesday, December 9.

The meeting closed at 10.45 p.m.

THE GUILD

S.B.C. Meeting

The State Branch Committee of the Queensland Branch of the Guild met at Drysdale Chambers, 4 Wickham street, Brisbane, on September 4, at 8 p.m.

Attendance: Messrs. W. A. Lenehan, C. A. Nichol, W. E. Martin, F. H. Phillips, J. J. Delahunt, A. Bell, A. M. McFarlane, H. Darrouzet, A. B. Chater, A. W. Eberhardt, R. M. Ward, L. W. Huxham, and the State Secretary.

Election of Office Bearers.—Mr. Lenehan said before asking the Returning Officer to report on nominations he had received for the executive officers for the coming year, he would like to state that he had decided not to seek re-election. He had much pleasure in nominating the Vice-President, Mr. C. A. Nichol, who had stood by him for eight years. He would like to say how grateful he was to Mr. Nichol for his wonderful support. To all the other Members of the Committee he was most grateful also for their help and assistance in every way. Mr. Lenehan said he would also like to thank Miss Brigstocke for her assistance at all times.

Mr. Lenehan then retired from the chair, after asking the Returning Officer to report on nominations.

Mr. Darrouzet, as Returning Officer, reported that he had received nominations as follows:

President: Mr. C. A. Nichol.

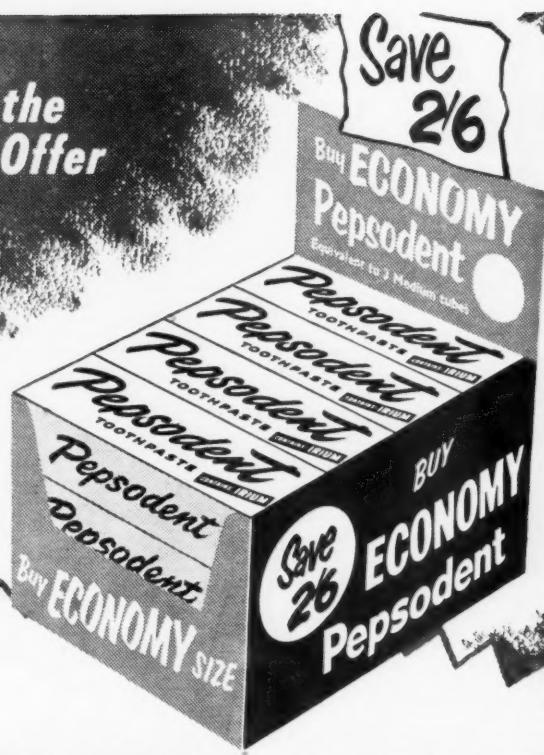
Vice-President: Mr. A. W. Eberhardt.

Hon. Treasurer: Mr. A. Bell.

These being the only nominations to hand, he declared the three office-bearers duly elected.

New President's Remarks.—On Mr. Nichol taking the chair as the President for the ensuing year, he said firstly he would like to pay tribute to Mr. Lenehan for the way he has carried out his duties as State President of this Branch for the past eight years. He personally felt he had a very good friend in Mr. Lenehan and he did not like to see him vacating the position. When Mr. Lenehan took office, the Guild was not as solid as it was today.

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QUEENSLAND—Continued

Mr. Nichol said he would also like to welcome the new Vice-President, Mr. Eberhardt, and the new Treasurer, Mr. Bell. Mr. Nichol said he could assure the Committee that whatever the Executive decided would be in the interests of pharmacy in Australia and in Queensland in particular, with a view to improving the interests for the retail pharmacists in this country.

Federal Delegate: Mr. W. E. Martin was appointed Federal Delegate.

Second Delegate: It was resolved that the President or his nominee, whoever is available at the time, be appointed Second Delegate.

Appointment of Sub-Committees: Mr. Nichol said he was hoping to have a meeting of the Executive shortly, at which consideration would be given to the appointment of Sub-Committees for the coming year.

New Member Elected: Mr. P. B. Costiff, Banyo.

Branch Recording: Mr. R. J. Nance, Coorparoo

Partnership.—Mr. S. F. Callinan, Beaudesert, has taken his son into partnership and they are now trading as S. F. and P. S. Callinan.

Correspondence.—To Federal Secretary, forwarding remits for inclusion on the Agenda for the Federal Council Meeting to be held in October.

To Pharmaceutical Association, concerning the communication received from the Department of Customs and Excise, with regard to supply of spirits to pharmacists; advising that the Committee considers that the allowance of two gallons of spirits per month to a pharmacist is not excessive.

To Chamber of Commerce, advising that Mr. J. J. Delahunty has been nominated to represent this organisation.

From Hon. A. Munro, Minister for Justice, forwarding for information copy of question asked and reply given in Parliament concerning chemists' professional fee.—Reply expressing appreciation of the courtesy extended.

A copy of the booklet "The Story of Your Guild", prepared by the Public Relations Secretariat, which will shortly be available for distribution, was tabled and members referred to the excellence of this publication.

Merchandising.—Mr. Delahunty reported that enquiries had been made of Bristol Myers, concerning a Christmas Gift Pack for Ipana and Ingrams.

Mr. Delahunty referred to the Rexona Coronet Toilet Soap two-in-one offer, which is similar to the offer which has recently been introduced by Colgates on small size Cashmere Bouquet Soap. He said the Guild had been opposed to these offers over the years.

Mr. Lenehan said he felt as it was a two-in-one offer Rexona had introduced, that the Guild's policy opposing these offers should be again brought before members' notice. He moved that members' attention be drawn to two-in-one offers and the Guild's opposition to these offers be also brought before members' notice. Seconded by Mr. Eberhardt. Carried.

Mr. Delahunty said he had had correspondence from D.H.A. concerning Dexsal advertising, and the special month which would be arranged next year.

"Gilseal" Dyes.—Mr. Delahunty said he had been in touch with the new manager of Sanders Chemical Co., with a view to getting a special "Gilseal" Dye Month, and it had been suggested that October be set aside for displays featuring "Gilseal" Dyes.

Mr. Delahunty said there was a new idea on "Gilseal" Dyes and colour blending. He thought it would be an excellent idea if the Guild could arrange a night, so that the personnel from Sanders Chemical Company, qualified in dyeing, colour blending, etc., could give a talk to Guild Members and their staffs.

Mr. Delahunty also submitted the new "Gilseal" Dye Chart which was now available, and the small stand which could also be procured for holding the colour chart. He had suggested to Sanders Chemical Co. that two dye cards be made available to every pharmacy. The cards were covered with cellophane, so that they would keep clean longer. He had also arranged for the October issue of "Idle Moments" to contain a comprehensive article on "Gilseal" Dyes and Colour Blending, and had suggested to Sanders Chemicals to tie in with these proposals by featuring some advertisements in the daily press.

Mr. Martin said he thought it would be an excellent idea if Mr. Delahunty could obtain a quote for 20,000 copies of the article which would be published in "Idle Moments". He felt that many members would be glad to have some extra copies of that article to hand to customers.

Federal Delegate's Report.—Mr. Martin reported on correspondence he had received from Federal Office during the month.

Meeting at Caloundra.—Mr. Nichol reported that in company with Mr. Lenehan, Mr. Chater and Mr. Huxham, he had attended a meeting at Caloundra, at which nine members from the surrounding towns were present. After a talk and discussion re formation of a Guild Zone, the Members present unanimously agreed to establish a North Coast Zone. Mr. Burnett, of Maleny, was elected Chairman and Mr. N. E. Edmiston, of Nambour, Secretary. Mr. Chater promised to provide the Zone with a Pricing Lecture, and this has been set for November 3. Mr. Nichol said he thought this Zone would prove equally successful as other Zones which have now been functioning for some time. The members in the area were very keen, and some who were unable to be present had promised their support.

Pricing Lecture.—Mr. Chater said over the years he had given pricing lecture during the Guild visits to the North, to final-year students, but he had never given a pricing lecture to chemists in the Brisbane area. From time to time many queries were received at the office, and he thought it would be advisable if a lecture on pricing was given to chemists in the Brisbane area. He thought this would be very helpful, as there were many chemists in Brisbane now who had never had any, or had very little, tuition on pricing.

Mr. Lenehan said he thought Mr. Chater's idea was a very good one. Many queries on pricing were received. He moved that this matter be left in the hands of the President and the Pricing Officer. Seconded by Mr. Martin. Carried.

Pharmacy Board.—Mr. Nichol reported on matters which had been dealt with by the Board at its August Meeting.

Establishment of Zones.—Mr. Nichol said he had been giving some consideration to the question of establishing zones in the Brisbane area. He knew this was a matter which Mr. Chater had been very keen on for some time. Brisbane was developing so quickly, and as we now had nearly 300 members in the area, he felt it was a very opportune time to zone the City and suburbs. Possibly, from such zones representatives to the State Branch Committee might be drawn.

Mr. McFarlane said he fully endorsed the views expressed by Mr. Nichol. Victoria was very well zoned. Of course, he knew it was not the size of Queensland, but from those zones came representatives to the State Branch Committee.

Mr. Chater said he had favoured the establishment of zones for many years. He was pleased to know that consideration would be given to the setting up of zones, as he thought it was very fit and proper that such zones should have representation on the State Branch Committee.

The meeting closed at 10.45 p.m.

SOUTH AUSTRALIA

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in S.A., Mr. E. F. Lipsham.

Mr. W. Chapple is on long service leave.

Mr. E. Wheeler has opened a pharmacy at 73a Hindley street, Adelaide.

Mr. H. Burlinson relieved Mr. C. Pfeiffer, of Murray Bridge for most of September and October.

Mr. T. Christie assisted Mr. W. Clarke, of Colonel Light Gardens for four weeks in September and October.

Mr. M. Eckersley visited Yorketown in the middle of September under engagement by Mr. D. Webb.

The beginning of September saw **Mr. A. Flower** down at Murray Bridge to assist Mr. F. Butcher.

Mr. A. Flower visited Mount Gambier in August under engagement with Mr. W. Willis.

Late in August **Mr. G. Mathieson** assisted Messrs. Martin & Tonkin, of Rosewater, for a few days.

Bob Brice & Co. (Ron Medlow and Don Farley) send a postcard from Helsinki dated July 13.

Mr. D. Warren assisted Mr. E. Hogben, of Woodville, in the early days of September.

Mr. D. King spent the first week in September with Mr. R. Gwynne, of Lockleys.

Mr. J. Redmond is now registered as manager for Friendly Society Dispensary on The Parade, Norwood.

Mr. W. Hearn has sold his pharmacy in Salisbury North to Mr. M. Callaghan and opened a new pharmacy in Elizabeth grove, Elizabeth.

During September **Mr. W. Vivian** visited Moonta to manage the pharmacy conducted by Mr. R. Gartrell during his holiday break.

Mr. A. H. Anderson, of King's Park, has sold his pharmacy on Goodwood road to Mr. D. McLaren, of Wastell & Co., King William street, Adelaide.

Mr. W. F. Wilson (Pfizer Ltd.) has transferred his registration to New South Wales, where he will reside in the future.

Mr. H. A. Chittleborough (Tanganyika) and **Mr. D. Pope** have both applied for recognition under reciprocal agreement with Great Britain.

Mr. J. Jelfs acted during the middle of September as relieving manager for Mr. G. Murrie, of Anzac highway, Glenelg.

Mr. G. Kinnear was successful in the August examinations for fourth year medical students and is now enrolled in the penultimate year of studies.

Mr. R. Burlinson visited Penola (Mr. E. F. Williams) and Orroroo (Mr. R. Vietch) each for a few days in August.

Mr. J. Jelfs provided holiday relief for Mr. R. Evely, of Allenby Gardens, at the end of August and beginning of September.

Mr. V. Moriarity spent three weeks as relieving manager at Cavanagh's pharmacy, Maylands, during the absence of Miss E. Gibson (Mrs. Horwood).

During the absence of **Mr. G. Somerville** on his trip to Japan his pharmacy in Grote street will be in charge of Mr. J. Pain.

Mr. C. Parker acted as locum in the last weeks of August for Mr. F. Crowley, manager for Mr. M. J. Woollard, of Sturt street, City.

Mr. W. Vivian visited Maitland for the period of Section "O" meetings to allow Mr. J. Bourne to visit Adelaide for those gatherings.

The following pharmacists have joined the S.A. Register under reciprocal arrangements: From New South

Wales, **Mr. J. Culhane** and **Mr. P. Hislop**; from Queensland, **Mr. P. Hickey**.

Mr. Jon Davies acted as locum at Runge's pharmacy, Grenfell street, Adelaide, at the end of August, and beginning of September to allow Mr. M. Rodger to have a vacation.

Mr. D. King assisted Mr. E. Miller, of Kensington, in August, and Mr. R. Gwynne, of Lockleys, in September.

Mr. G. Kinnear spent a fortnight of the vacation with Mr. M. Prosser, of Colonel Light Gardens.

Mr. R. Eckersley went to Stirling West for a fortnight during the school vacation to allow Mr. D. C. Hill, Treasurer of the Pharmacy Board, to have his holidays with his boys. **Mr. G. Offe** acted as locum for the third week of the vacation.

Mr. G. Goldsack has moved about—Messrs. Bartold & Cox, Hectorville, and Mr. R. Grist, Largs Bay, in August, then to Mr. M. Brady (F.S. Dispensary), Mt. Gambier, and L. Manning, of Tailem Bend, in September. He will not leave there until well into October.

Section "O"—Two previous South Australians now resident in the Eastern States noticed at the recent conference were Mr. P. Berry (D.H.A., Melb.) and Mr. W. Wilson (Pfizer Ltd., Sydney).

Mr. W. Richards has acted as manager during August and September in turn at the following branches of the Friendly Society Medical Association: Port Adelaide (Mr. A. Cushway); Goodwood (Mrs. M. Hamilton); Glenelg (Mr. K. Netting).

Mr. A. A. Russell, Vice-President of the State Branch Committee of the Guild, has been appointed as a delegate to the Federal Council of the Guild in place of Mr. H. G. Collyer, who recently retired from active participation in Guild affairs.

Tablets Kill Child.—Maree Dawn Hutchinson, 4, of Hamilton avenue, Osborne, died at her parents' home soon after she had swallowed a number of tablets. The child was unconscious when her parents and a neighbour took her to the Port Adelaide Casualty Hospital, where an unsuccessful attempt was made to revive her with oxygen.

ENGAGEMENTS

Congratulations to the following:

Anne Veronica, daughter of Mr. and Mrs. H. J. Burns, of Black Forest has announced her engagement to Gerald Campbell, son of Mrs. M. M. Kinnear, of North Adelaide, and the late Mr. C. T. Kinnear. Anne is an old scholar of Cabra Convent, and her fiance, a pharmacist, is now a fifth-year medical student. They will celebrate with a family dinner party.

Evers-Standish: The engagement is announced of Hildegarde (Jackie), youngest daughter of Mr. and Mrs. P. Evers, of Tanunda, to Donald James, only son of Mr. and Mrs. A. J. Standish, of Torrensville.

MARRIAGE

Pickering-Parker.—The marriage of Beverley, daughter of Mr. and Mrs. H. R. Pickering, of Glenelg, to Colin, son of Mr. and Mrs. H. J. Parker, of Tusmore, was solemnised at Brighton Methodist Church on September 13.

BIRTHS

Weller.—To Pamela and Reginald, on August 19, at Calvary—a daughter.

Frazer.—To Margaret and Ken, at Williza, on 3/9/58—a daughter.

Lawton.—On September 3, at Q.C.M.H., to Helen and Brian—a daughter.

Kirby.—On September 9, at Memorial, to Pauline and David—a daughter.

Aldislite

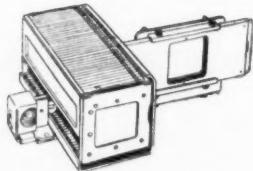
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JUNIOR
PROJECTOR
WITH
SENIOR
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Finished in brilliant cream and maroon, the new Aldislite is semi-automatic. Second slide ejects first. The Aldislite takes the Airequipt Automatic Slide Changer and gives a full brilliant colour picture on the screen.

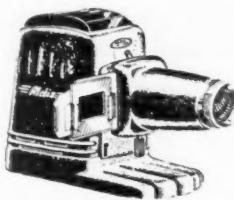
£14/11/-

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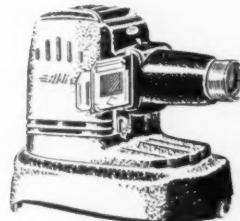
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Airequipt Automatic Slide
Changer, £6/15/-,
with one magazine.



Aldis Aspheric 2, £29/15/-.



Aldis Aspheric 3,
Blower cooled, £39/10/-.

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Bigger profits are yours when you sell FlyTox because FlyTox gives you a better margin combined with continued and progressive sales. Get FlyTox now and sell FlyTox for BIGGER PROFITS.

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FlyTox retailers are backed by a national advertising campaign and attractive display material is yours on request.

Special parcel buy:

You get even more profit from FlyTox if you buy the Special Parcel . . . 6 dozen assorted gives a discount of 5% through your own wholesaler.



and now! The 20 oz.
Economy Can

A sure seller, this 20 oz. can of FlyTox has much to offer . . . it takes up less shelf space and there are no breakages . . . it displays itself strikingly, black lettering on yellow ground. And remember, it has a drip-proof plastic pourer . . . stock FlyTox to sell FlyTox in the new 20 oz. economy can!

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SOUTH AUSTRALIA—Continued

A.N.Z.A.A.S.

Several prominent retail pharmacists obtained sufficient assistance to enable them to attend day sessions of Section "O," namely, Mr. D. Penhall (J. Pain), Mr. K. Porter (Mrs. Anon.), Mr. A. Russell (Mr. Billing).

Student pharmacists at Section "O" meetings were H. Giles, P. Lugg, G. Lee, M. Abbott, J. Bennett, V. Lasarre, H. Jenner, R. Bessell, R. Turner, Rowell, Kachne.

The following S.A. wholesale manufacturers were noticed at the day meetings of Section "O": Messrs. A. Scammell, R. Patterson, K. Johnson, L. Dundin, R. Weller, R. Chesney (F. H. Faulding & Co.); Mr. R. Thompson (D.H.A. Ltd.); T. Armstrong (Evans Medical Supplies); A. Gould (Hamilton Laboratories); G. Smith (Parke, Davis); K. Neill and J. Styskewski (Burroughs Wellcome).

South Australian hospital pharmacy was well represented during some of the daily gatherings, more particularly by Mr. S. A. Downie and Mr. W. Blanks, of Adelaide Children's Hospital. Also seen were Messrs. G. Burns, L. Jeffs, B. Holland, D. Coles, Mrs. L. Roberts and Messrs. F. Paterson and Z. Walsh.

The meetings of Section "O" of A.N.Z.A.A.S. were marked by the attendance of several country pharmacists, more particularly Messrs. J. Bourne, of Maitland; W. Fraser, of Snowtown; and H. A. Brauer, of Tanunda.

PHARMACEUTICAL SOCIETY

Annual Meeting

Annual General Meeting

The President, Mr. D. J. Penhall, presided over a small attendance of members in the Curzon Theatre on the evening of August 28.

The minutes of the previous meeting and the financial statements as brought forward by the Treasurer, Mr. A. A. Russell, were handled without comment.

Amendment of Rules

An alteration to the Rules was made after the President of the Pharmacy Board made a suggestion about redrafting, and Rule 16(2)(u) now reads:

"To grant leave of absence to any member while absent from Australia for a period exceeding three consecutive months and to make pro rata allowance for the subscription prepaid on return of such member."

Education Advancement Fund

The Vice-President, Mr. K. D. Johnson, spoke to the item on the agenda dealing with proposals for the establishment of an Education Advancement Fund and collateral modification of contributions to the Benevolent Fund. He stated that the Council had recently received additional relevant information which could possibly modify the original plan. As a consequence he asked that the matter be deferred until the next General Meeting. This was accepted by the members present.

The following summary includes all the major items of the President's annual report:

"I take this opportunity of presenting to you a brief review of the activities of your Society during the past 12 months."

Extracts from the Council's Annual Report

Annual Elections: It is pleasing to note that there was an improvement in the effective votes compared with the previous year, the respective figures being 54.7% and 44.7%. However, even this is disappointing to members who offer themselves for election with the intention of devoting their time and energies to the improvement of status of the pharmacy profession. Members of the Council appeal once again to all members to exercise the rights granted by the Constitution and Rules.

Council and General Meetings: The Council met at

monthly intervals. General meetings were held on August 26, 1957 and February 17, 1958. Attendances at both general meetings were fairly satisfactory. The discussions which developed at the latter meeting were noted with appreciation. As in the past, detail between monthly meetings was investigated and discussed by sub-committees. During this particular year the sub-committees worked hard and unselfishly.

Education: No survey of this phase can be made without first mentioning the impending retirement of our old friend and mentor of the Pharmacy School, the Senior Lecturer, Mr. E. F. Lipsham. Mr. Lipsham is due to leave Darling Building at the close of the present academic year and will retire from the lectorial field while still an extremely active and alert tutor. However, the loss to the Department will be compensated by his having more time to devote to Society and Board matters—ever in the interests of his friends of the profession. It has been decided to grant Mr. Lipsham long service leave in accordance with the Federal scheme.

The Council has continued to watch developments in pharmaceutical education outside the State and has maintained the high South Australian standard. We feel it is a complete pharmaceutical course containing as it does proportions of basic science, applied science, economics and the humanities. As an example of the wide scope of the practical side of the course, it is mentioned that lectures are given by experts in their particular fields, namely guest speakers, Mr. C. G. Stebbing, insurance; Mr. R. A. Potter, banking; Mr. F. Hawes, business studies; Inspector Evans, aspects of criminal law.

The intake from secondary education into the Diploma Course in 1958 was higher than in 1957. This bears out the forecast given in last year's report that the figures will tend to rise in future years.

After a year abroad on Pfeiffer and Fulbright Traveling Scholarships, Mr. R. A. Anderson has returned, benefited greatly, from his study abroad. He came along tonight to give a few impressions on the lighter side of his trip and this has given us an opportunity to welcome him back.

During the absence of Mr. Anderson, Mr. B. S. Stock assisted in the Department. He has now left and we take the opportunity of thanking him for his services and wish him well in his studies for a Science Degree. On the resignation of Mr. Bowey from the lectorial staff, Mr. R. H. Billing was appointed. We also take this opportunity of referring to the co-operation of Professor D. O. Jordan in education matters. The Professor has always shown an active interest in our Society and has attended many of our functions in order to meet members personally.

Students' fees were reviewed at the close of 1957, but no further change was made even though costs are still rising. The impact of the higher fees of the previous year has given a much better financial result than shown last year.

Prizes and Awards: The conditions for these are at present under review. New conditions will operate from the November, 1958 examinations. The opportunity is taken of acknowledging with thanks the institution of a Francis Hardey Faulding Memorial prize by F. H. Faulding & Co. Ltd., to commemorate the late Mr. Faulding, who was one of the earliest pharmacists in this State. The opportunity to commemorate past members of standing is always appreciated.

A.P.F.—Revision of 9th Edition: At the present time there appears to be little or no movement by the Central Editorial Committee. Suggestions have been submitted by the South Australian Revision Committee. Some of the other States have done likewise.

Post-Graduate Talks for 1958: As a break from tradition it has been decided to arrange some field visits. The first will be to the Kilkenny works of the Australian Glass Manufacturing Company. Another will be to the Southwark Brewery.

Gifts: Several gifts made during the year have been mentioned in monthly reports.

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Rauwolfia serpentina has been used for centuries in India and Malaya. 'Theominal' has been prescribed by physicians for decades.

The synergistic combination, Seominal, has these advantages:

1. Gradual but sustained reduction of blood pressure.
2. Diminution of emotional tension, anxiety and insomnia.
3. Alleviation of congestive headache, vertigo, dyspnoea.
4. Improvement in orientation and social behaviour in the aged.

DOSAGE: 1 tablet 2 or 3 times daily.

SUPPLIED:
Scored tablets in bottles of 100 or 500.

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('Luminal' gr. $\frac{1}{6}$)
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SOUTH AUSTRALIA—Continued

P.A.A. Meeting in June, 1959, in Adelaide: Progress has been made with the planning of the next biennial Australian Conference. An appeal to all members for a donation to aid the meagre funds has been successful, more than £1000 having been received.

Complimentary Dinner to Newly Qualified Members: The usual welcoming function for newly qualified members was held at the Pier Hotel, Glenelg, on May 29. The final year medals and prizes and standard certificates were presented to recipients. The dinner and surroundings were excellent, but the attendance was disappointing. While the Council agrees that some function should mark the entrance of graduates into the ranks of membership, it is uncertain just what form it should take in the future.

Week-end Convention: In August, 1957, the first week-end pharmacy convention was held at Aquinas College, North Adelaide, organised by Miss Zeta Walsh. An enjoyable social evening on Saturday preceded a series of successful meetings on Sunday. The attendance was most satisfactory; that of some country members was particularly gratifying.

Proposed Pharmacy Building: No definite progress has been made with this proposal. However, it has not been abandoned, and the matter will again be considered. Figures will be submitted to a General Meeting of members.

Medicine Danger to Children: The Council joined in a nation-wide press campaign to stress the danger to children of drugs and medicines in the home. Unfortunately, in this State the press was not as helpful as in other States. The Pharmacy Board co-operated in preparing statements. It is necessary for the dangers to be brought before the public at frequent intervals to be fully effective.

Clinical Analysis: The Council has before it suggestions for the introduction into retail pharmacies of some types of clinical analyses, where the pharmacists have the necessary qualifications. This project is still under discussion.

Secretary: During the year Mr. H. C. Martin resigned as Secretary of the Society. Members will recall that Mr. Martin previously relinquished his direct secretarial duties to his assistant. On Mr. Martin's resignation, Mr. Edwards was appointed Secretary. Mr. and Mrs. Martin were entertained at a private dinner in the Highway Inn. This was attended by most members of the Executive Committees with whom Mr. Martin had been in contact during his term of office. A presentation of a suitably inscribed wrist watch was made to Mr. Martin. Mr. Adams, Secretary/Registrar of the Pharmaceutical Society of Great Britain, and his wife, were present.

Victorian Pharmaceutical Society Centenary: In October the Victorian Society commemorated its Centenary and sent invitations to kindred bodies throughout Australia. The South Australian Society was represented by your President and Councillor Miss Z. M. Walsh.

Barbecue and Dance: In February last a barbecue and dance was arranged at the Largs Pier Hotel. The function proved successful; it was well attended by members, their apprentices and staff.

Picnic: In September the first annual picnic football match between pharmacists and students was held at National Park, Belair. Unfortunately, the weather was most unfavourable, but many attended in cars. Both players and spectators thoroughly enjoyed the afternoon.

Squatting: There was little activity necessary this year, as there were but few cases of new pharmacies opening near existing ones. In the cases brought forward settlement was reached by the administrative officers.

Benevolent Fund: The balance in the Benevolent Fund has increased during the year. There were no applications for assistance.

Civil Defence: Schools for key personnel have been held at Mt. Macedon in Victoria. A special school was attended last June by Messrs. J. Pickering and B. Wandke as our representatives, Mr. D. C. Hill for the

Pharmacy Board and Mr. K. S. Porter as a nominee of P.A.A.

We are informed that the school was most instructive. It is to be followed by a liaison school with medical and dental personnel in November-December next. Only one representative will be required and this will be one of those who attended in June. Post-graduate talks by those who attended are to be arranged at a later date.

Advertising: A case of advertising by a pharmacist on a tradesman's dodger which included references to cut prices for grocery products, meat, and so on, was brought before the Council. There was nothing offensive, but the Council does not consider it to be strictly professional for a pharmacist's name to appear on such a "dodger." It is felt that pharmacy should be brought before the public in a more appropriate manner. This is mentioned to indicate the views of the Council, who now ask for the aid of all members in maintaining appropriate standards in advertising.

The President then announced that Mr. R. A. Anderson, who was just back from overseas, having completed his Pfeiffer Scholarship, would give some interesting highlights of his trip.

Mr. Anderson showed a large number of coloured slides and gave the salient points of each of them. His selection of views were all taken in the summer time and so provided a bright, visual background to his rapid and racy comments.

Some of the more interesting non-technical highlights of his stay in the United States have been summarised, more particularly for country members, in the following paragraphs.

New York: This city of about 8 million people centres around Manhattan Island, which is only about 10 miles long and about 2½ miles wide. The island is one huge mass of rock. It is too expensive, even for American ideas, to make excavations which would provide underground parking stations. Obviously this problem has made underground railway very expensive undertakings, but the fare is 15 cents (about 1/4) for any distance.

On the other hand the rock formation of the island provides excellent foundations for the world-famous skyscrapers, which would not be possible on less secure bases.

Washington: This city has been the capital of the United States since 1800, and has much in common with our own Canberra. A tract of land was ceded by the State of Maryland to become the District of Columbia in much the same way as part of N.S.W. became the Australian Capital Territory.

As the national capital this city is the site of many memorials to American soldiers and politicians, in particular those erected to Washington himself, Lincoln and Jefferson being the best known.

The parliamentary chambers are located in the United States Capitol Building. This edifice has a most impressive dome which is copied in State Houses of Parliament and also in city halls throughout the country.

Ann Arbor: This place has been likened to Adelaide, but the overall population of about 50,000 is about one-tenth of our own city. Ann Arbor is the location of the University of Michigan, which has an enrolment of about 22,000—in other words, over two-fifths of the residents are students. This seems to be the explanation of the unusual number of push-bikes to be seen on the streets in spite of the fact that hills are quite common.

Ann Arbor is also remarkable in American life for the fact that the University College Hospital numbers about 1000 beds. This is a ratio of about 1 in 50 of inhabitants. Obviously the surrounding countryside must provide many patients for the specialised treatments available in the hospital.

Chicago gives the impression of being a very dirty city—possibly because of the elevated train track which runs in "a loop" around the business centre. However, it has been described as the most American of all American cities. It is famous among other things for its Merchandise Mart, the country's largest commercial



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THE introduction of CALFLUOR Tablets (Greenson) now provides the requisite prophylactic combination for the development of sound tooth formation and the inhibition of dental decay.

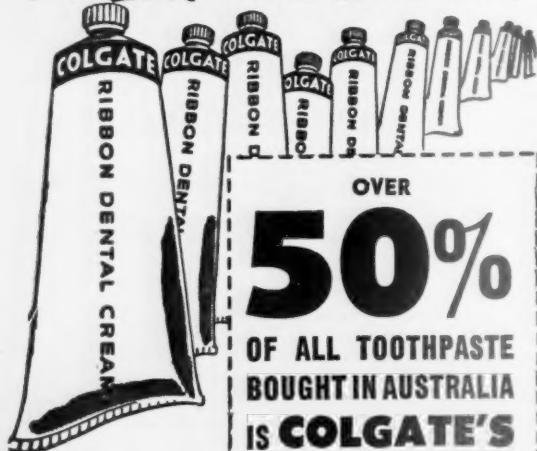
CALFLUOR formulation (Tricalcium phosphate 500 mg.; sodium fluoride 1 mg.) meets the optimal requirements for proper prophylaxis for children and also for expectant and nursing mothers.

CALFLUOR is being sampled and advertised to doctors and dentists throughout Australia.

Bottles of 200 tablets
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Sales are stimulated by constant powerful advertising in magazines and newspapers AND Bob Dyer's most "listened-to" shows on the air.

Estimate! 5 out of 10 people ask for COLGATE DENTAL CREAM AND COLGATE CHLOROPHYLL TOOTHPASTE

E1308

SOUTH AUSTRALIA—Continued

building, with 93 acres of floor space; also for its Board of Trade Building, home of the world's largest grain market, which is symbolically topped by a six-ton cast aluminium statue of Ceres, goddess of grain. Another outstanding feature is the Conrad Hilton Hotel, the country's largest hotel, with 300 rooms.

San Francisco: Although the main public system of transport is by buses, there are still two cable car routes. It was impossible to decide whether the residents of this city really want to keep the old, dilapidated cable cars on the roads. However, they are there, and as they are pulled along by gripping a moving cable below the surface of the road, every other form of traffic has to give them right of way. Because of this power system the driver must "ungrip" every time he wishes to stop before he applies the brakes.

At the end of each line the car is run of its own momentum onto a turntable and there pushed around the half circle and also onto the other track by the dual manpower of driver and conductor. Waiting passengers do not assist, but rather make the job harder by taking their seats before the turn round is completed.

Homeward Bound: Under the Pfeiffer Scholarship system a grantee is required to spend not less than 10 months in U.S.A. Mr. Anderson spent about eight months at the Philadelphia College of Pharmacy and Science in the State of Pennsylvania.

This educational centre is maintained as a self-contained financial entity without the benefit of government funds, in contrast to the State University.

The remaining two months he spent in short visits to other centres, including a trip to Vancouver, in Canada, on his way across the American continent in a westerly direction.

He embarked at San Francisco and took advantage of the privilege allowed by Qantas and other major airlines to "stop-over" as desired and so saw something of the Pacific islands.

Hawaii and Fiji: The contrast between these two islands is quite marked. On the one hand Hawaii and, in particular, the Waikiki Beach of Honolulu, is designed to both attract tourists, more particularly those from Northern America, and to relieve him or her of his bank balance!

Fiji is quite the reverse. Although the natural potential is a terrific asset, little attempt is made to attract visitors. As a consequence one has to go to considerable trouble to see the native villages and the sugar cane plantations with their very narrow gauge railway lines, tiny trucks and Lilliputian locomotives.

Australia: At home once more! Fleeting impressions of this and that do not overcloud the one big thing which comes back in the mind, namely, how fortunate we Australians are in our freedom to live unhampered by the colour bar. This freedom cannot be fully appreciated by anyone who has not lived in more complex communities than that existent in Australia.

One's original opinion that the so-called "White Australia" policy is harsh, unkind and unwarranted is very much modified. Harsh and unkind in some ways, it is not unwarranted. Much as we would like to think that Australians are more tolerant than other peoples, and that racial riots would not occur in our country, there is surely not sufficient evidence of our tolerance to take the chance on the basis that "Things will be different here."

Our present immigration should be maintained in the interests of all peoples, whatever the colour of their skins.—R.A.A./E.F.L.

COUNCIL MEETING

The Council of the Pharmaceutical Society of South Australia met at 27 Grenfell street, Adelaide, on September 3 at 7.45 p.m.

Present.—Mr. D. F. J. Penhall (President), in the Chair, Messrs. K. D. Johnson, A. A. Russell and B. G. Wandke, and the Secretary.

Apologies.—Mr. J. R. Pickering and Miss Z. M. Walsh; also Mr. E. F. Lipsham, who attended the Council room where he received an emergent message to attend hospital.

Correspondence.—To the Pharmaceutical Association of Australia advising that the Council sees no objection to the Government proposal re rectified spirit, provided that supply is made in two-gallon lots six times a year.

To the Shell Co. of Australia Ltd., confirming booking of theatrette for Monday, February 29, 1959, for Half-Yearly meeting.

To Mr. R. L. Weller, forwarding information regarding Conference Fund as requested by him.

From Mr. G. B. MacRae, thanking Council for expression of sympathy in recent bereavement.

From Mr. T. S. Booth forwarding membership fee and Benevolent Fund contribution from Germany.

From Miss K. Penny, of Broken Hill, advising that she will be in Adelaide in late November to endeavour to arrange apprenticeship and entry to the Pharmacy course.

From the Pharmacy Board, advising Mr. D. C. Hill is prepared to act as South Australian representative to the Macedon School November-December. It was resolved that the Council support the nomination of Mr. D. C. Hill.

From Mr. C. S. Hann, advising withdrawal from the Course at the conclusion of the second term and acknowledgment directing return of books. The Secretary reported that Mr. Hann had paid his first and second term fees. Received and noted.

Finance.—Statement for the month of August was submitted and adopted, and accounts totalling £1239/3/6 were passed for payment.

A.P.F. Revision.—Mr. Johnson said that he would call a meeting of the South Australian Committee in the near future and would report to a later meeting of the Council on the outcome.

New Member Elected.—Mrs. K. V. Read.

A.N.Z.A.A.S.—The President briefly reported on the recent Conference and meetings of Section "O" which had appeared to be quite successful. The papers given at the meeting had reached quite a good standard. Reference was made to the paper submitted by Mr. R. A. Anderson and his excellent Chairmanship. Mr. Anderson's paper was on a purely pharmaceutical subject which was in accordance with the principles of the Council of the Pharmaceutical Society. The Secretary was directed to address a letter to Mr. Anderson complimenting him on the matters referred to herein.

P.A.A. Conference.—Letter from the Secretary of the Local Organising Committee of Section "O" advising next Conference in Perth in August, 1959, and suggesting alteration of dates of P.A.A. Conference.

It was resolved that the Secretary of the Local Organising Committee Section "O" be advised that arrangements have so far proceeded for the P.A.A. Conference in May-June, 1959, that alteration of dates is impossible.

The President reported briefly on a meeting of the Adelaide Conference Committee held on August 18, minutes of which had been circulated to members of the Committee.

Post-Graduate Talks.—The Vice-President reported that he had in mind the visit to the Southwark Brewery sometime early in November, and the arrangement of a meeting during the third week in October to be addressed by the four representatives who had attended the June Macedon Civil Defence School, each taking a section of the instruction they received there.

Annual Meeting.—The President made reference to the poor attendance at the Annual Meeting in the Curzon theatrette. The Secretary was directed to place the item of Education Advancement Fund on the Agenda for the October meeting, and if not dealt with at that time, to repeat it for the November meeting.

Addressograph.—The Treasurer referred to the delay caused by typing of envelopes for members separately each time information was to be forwarded. He suggested that an investigation be made into the possibility

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VICTORIA: John Kiddell, 245 Swan Street, Richmond. JB 2543.
SOUTH AUSTRALIA: Doug Toppin, 1 Balkissoch Road, Torrens Park. U 3620.
WESTERN AUSTRALIA: Geoff Martin & Son, 83 Brisbane Street, Perth. BF 1791.

SOUTH AUSTRALIA—Continued

of obtaining an addressograph, either new or second-hand at a reasonable cost. The Secretary was directed to obtain information on machines available and prepare a submission on the relative merits and costs for consideration at the October meeting.

THE GUILD

S.B.C. Meeting

The State Branch Committee of the South Australian Branch of the Guild met at 61 Gawler place, Adelaide, on September 8, at 7.30 p.m.

Present.—Messrs. E. L. Miller (President), A. A. Russell, R. R. Patrick, A. G. Lean, J. C. Measday, Walter C. Cotterell, G. P. Bartold, J. Physick and L. H. Duncan (Secretary).

New Committee Members.—The President welcomed the new Committee Member, Mr. J. Physick. Unfortunately Mr. J. W. Stain, the other new member, was unable to be present.

Election of Officers.—The Returning Officer, Mr. V. L. Mitchell, announced that the following officers were elected as a result of nominations received.

State President: Mr. E. L. Miller.

State Vice-President: Mr. A. A. Russell.

State Treasurer: Mr. R. R. Patrick.

Committees.—It was resolved that the following be elected to the various Committees for the ensuing year:

Federal Delegates: First Delegate, Mr. Walter C. Cotterell; Second Delegate, Mr. A. A. Russell.

Pharmaceutical Medical Liaison Committee: Messrs. E. L. Miller, A. A. Russell and V. L. Mitchell.

Advisory Committee: Any two members of the Committee, one being a member of the Executive.

Pharmaceutical Liaison Committee: Any two members of the Committee, one being a member of the Executive.

Pricing Officer: Mr. Walter C. Cotterell, with Mr. J. W. Stain as his assistant, with power to co-opt any other members deemed necessary.

Federal Trade and Commerce Committee: Mr. R. R. Patrick, Chairman, with Messrs. A. G. Lean, J. Physick, G. P. Bartold and J. C. Measday, with power to co-opt any other members deemed necessary.

Trustees: Messrs. J. C. White, F. Moore, Walter C. Cotterell.

All Night Pharmacy.—The President reported that Messrs Saunders, White, Clampett and Cole had been co-opted to the special Sub-Committee appointed to deal with the establishment of an all night pharmacy. An inaugural meeting had been held on September 1, and while nothing concrete could be presented to the Committee at this stage, he reported that very favourable progress was being made.

Prices Department.—The Secretary read further correspondence received from the Prices Commissioner and also the Queensland State Branch. It was resolved that a suitable letter be forwarded to the Prices Commissioner along the lines indicated.

It was further resolved that the President, Vice-President, Mr. Walter C. Cotterell, and the Secretary should endeavour to arrange an interview with the Premier, Sir Thomas Playford, and convey to him the motion passed at the Annual General Meeting, namely that a deputation from the State Branch Committee approach the Premier, as Prices Minister, and seek decontrol of chemists' professional fees for the following reasons:

1. South Australia is the only State in the Commonwealth in which Pharmaceutical professional dispensing fees are controlled by legislation.
2. In South Australia the Pharmaceutical Profession is the only profession whose charges are controlled under the Prices Act.
3. The scale of fees fixed by the Prices Commissioner has not been varied in keeping with increases in basic wage and other costs despite the fact that the

fees in this State are the lowest in the Commonwealth.

Nestle's Lactogen.—The Secretary reported telephone conversation with the Adelaide Manager stating that the company is prepared to take a stand and do everything humanly possible to prevent price cutting in this State Received.

Federal Trade and Commerce Conference.—The special report prepared by Mr. Patrick on the business that took place at that Conference was fully discussed. The President thanked Mr. Patrick for the time taken in preparing the report and the interesting matter that it contained.

Merchandising Advertising Publicity Scheme.—It was resolved that this State Branch Committee take the necessary steps to implement the Merchandising advertising publicity scheme, similar to that already in operation in Victoria, involving the 1 per cent. deduction from wholesalers' account. As a preliminary step it was decided that full information should be obtained on the procedure adopted by the Victorian Branch to implement the scheme in that State.

Southern Drug Co. Ltd.—A letter dealing with a proposed increase in the price of methylated spirits and liquid paraffin was read. It was decided that the letter be handed to the Pricing Officer, Mr. Walter C. Cotterell, for his action. A further letter stated the reasons why various lines were temporarily out of stock.

Extra Medicine Schedule.—A letter from the Public Relations Secretariat dealing with proposed Extra Medicine Schedule was discussed. It was decided to hand the same to the Federal Delegate, Mr. Walter C. Cotterell, to bring forward at the Federal Executive Meeting to be held shortly.

Guild Nights for P.A.A. Conference May-June, 1959.—The Meeting was advised that this conference would be held from May 5 to June 2, 1959, and that a programme had already been set out by the Central Committee. From that programme it appeared that two nights would be available for functions.

Wholesale Distribution of Ethicals.—It was pointed out that certain ethicals were only available from F. H. Faulding and D.H.A. Ltd., and that it was difficult to arrange for the supply of those on Saturday mornings. It was decided that a letter should be written to Eli Lilly & Co. pointing out the lack of availability of their lines on Saturday mornings and suggesting the appointment of further representation in Adelaide.

D.H.A. and Bickfords' Parcels.—It was decided that an approach should be made by Mr. R. Patrick to the management of Bickfords and D.H.A. for all sections of their merchandise to be included in the six dozen and gross dozen buys.

Tax Cards.—A complaint was received re entering patent medicines on Tax Cards by the local grocer. The Meeting was not in favour of this matter being referred to the Retail Grocers' Association, but considered that the Guild tax cards stand should be recommended for use. This would obviate the necessity for tax cards being taken out of the shop and thus would not be available to the grocer.

Gillette Razors.—Complaint re supply of Gillette Razors in a complete unit—heavy, medium and light, and the fact that it was impossible to buy any of these sizes separately. Consequently one or the other size became overstocked. It was decided that the Secretary should refer this complaint to the Federal Merchandising Service and register a complaint.

New Members Elected.—Messrs. E. Wheeler, Adelaide; J. J. Cracknell, Gladstone, and A. Bajorunas, Brighton Heights.

Trade and Commerce Committee Report.—The Chairman reported upon various matters, the chief being merchandising information for submission to country members, Tru-flo feeders, Australian Glass Manufacturers, side on and end on markings on cartons, Bristol Myers Christmas pack.

It was decided that the Secretary should write to A.G.M. stressing the desirability of the cartons being marked on the ends as well as on the sides.

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Backed by strong-selling national advertisements, all carrying the Chemists' Guild Insignia, and attractive display material.

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 Accommodation includes rooms with
 private bath.

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More press advertising! More magazine advertising! More radio advertising! More advertising than ever before is now selling these two lines. More than ever it will pay you to stock and feature both AIR-WICK MIST and the famous AIR-WICK bottle.

H61

SOUTH AUSTRALIA—Continued

Pricing Officer's Report.—Mr. W. C. Cotterell referred to Sales Tax on prescriptions and sulphonamides, lack of availability of 40 pack from manufacturers and the request to the Federal Government to withdraw the approval of those manufacturers who were not prepared to make available the packs named by the Commonwealth.

Mr. W. B. Howard—Address to Members.—Mr. Howard wrote accepting an invitation to address Merchandising Discussion groups and members. It was decided that this meeting should be held on October 1 at 8 p.m. at the Y.W.C.A. Hall if this should be available. No supper to be provided.

Nicholas Pty. Ltd.—The President read a letter dated August 27, received by him from the company. It was decided that this matter should be referred to the Federal Merchandising Service to take up direct with the company.

Angel Face.—Letter to be written to Federal Merchandising Service, re the replacement of old packs of Angel Face powder.

Superannuation Funds.—Mr. Bartold stated that he considered the Guild should give some consideration to the incorporation of a Superannuation Fund for the benefit of all the members generally. It was decided that this matter be deferred for the next agenda.

Christmas Calendars.—Mr. Lean proposed that a Christmas calendar with suitable advertising matter and a form of order pad with tear off sheets be printed for distribution by chemists to select customers.

The meeting then closed.

Commonwealth News

PERSONAL and GENERAL

R.A.A.M.C.

The Commonwealth Gazette of August 7 carries an announcement that the provisional rank of Lieutenant W. H. Fallon has been confirmed.

WILKE & CO. LTD.

Two men who had been associated as proprietors in Wilke & Co. Ltd. since the early years of this century died within a few days of each other, both being octogenarians.

Mr. Herbert H. W. Wilke died on September 16 in his eighty-fourth year, and Mr. George James Cathie died on September 6 in his eighty-third year.

The late Mr. Wilke founded a small printing establishment in 1896 and Mr. George Cathie joined the firm in 1907. Both were men of tremendous energy and driving force, and in the course of their lifetime, assisted by a loyal staff that has grown to very large proportions, they built up one of the biggest printing firms in Australia.

The company has printed the Telephone Directory of Victoria for many years past. "Reader's Digest" is a comparatively recent addition to the range of publications handled. At one time these comprised many of the trade newspapers in Victoria. The Journal has been printed by Wilke & Co. Ltd. since it became a Federal publication in 1920.

Although the two deceased gentlemen had not been actively engaged in the daily affairs of the company for some years past, they continued as Directors until their death.

Mr. G. M. Cathie, elder son of the late Mr. G. J. Cathie, has been Managing Director of Wilke & Co. Ltd. for several years past.

We extend sincere sympathy to the members of both families.



His Majesty

*the Baby,
demands the best...*

... and you know

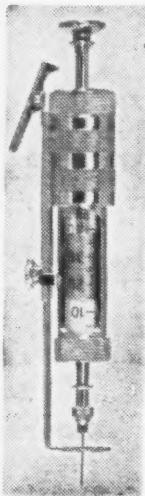
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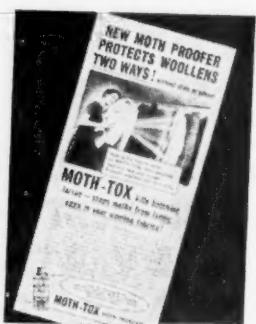
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**new aerosol moth proofer protects
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This is the very same fast-selling American product that did away with old-fashioned moth balls and flakes. MOTH-TOX moth proofer is easier to use . . . MOTH-TOX does the work without the mess . . . MOTH-TOX leaves no unpleasant odour . . . MOTH-TOX kills eggs, larvae and moths from just one spraying, without staining wool fabrics, upholstery, carpets, blankets, etc. The effect of MOTH-TOX lasts for a full year.

Here is one in a series of hard-hitting ads. to appear in Woman's Day. It tells and sells the MOTH-TOX story to hundreds of thousands of readers. Action-producing point-of-purchase displays on your counters will do the rest.



MOTH-TOX

A PRODUCT OF SCOTT AND BOWNE

VY63

Wholesale to retail, 6 oz., 76/- per doz. Retails, 7/11 each.
11 oz., 139/2 per doz. Retails, 14/6 each.

ORDER NOW! Have adequate stocks of MOTH-TOX for the spring advertising campaign.

moth proofer

WESTERN AUSTRALIA

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in W.A., Mr. F. W. Avenell (phone BA 4082).

Mr. P. R. Merryweather has opened a pharmacy at Beaufort street, Bedford Park.

Mrs. A. E. Godfrey, of Willagee, paid a visit to Melbourne during the month. Miss J. Firth acted as locum.

The President and Registrar of the Pharmaceutical Council paid a goodwill visit to chemists in the wheat belt during the month.

Congratulations to **Mr. J. A. Lewis**, of Midland Junction, on his appointment as a Justice of the Peace.

Mr. J. V. Chardwick has re-opened the Midvale Pharmacy, formerly conducted by Mr. C. J. Millen.

Mr. K. T. McLennan has been appointed to the position of Poisons Inspector in place of Mr. L. R. Maywood, who resigned recently on account of ill-health.

Mr. G. R. Richmond has taken over the pharmacy of Mr. F. Ryan at Rivervale. Mr. Ryan has returned to Victoria.

Mr. Jack Benn has returned from a two years trip to England and the Continent. His comment, "I thoroughly enjoyed it, but am glad to be back in the sunshine."

Wedding.—Congratulations and best wishes to **Mr. and Mrs. Barry McMahon**, who were married on August 30. Barry qualified last year and his wife is a niece of Mr. A. T. Clune, chemist, of Midland Junction. Ted Rear acted as best man.

Mr. F. A. Yeates, General Manager of F. H. Faulding & Co. Ltd., Perth, and for many years Works Manager of the Faulding Laboratories at Southwark, South Australia, has been elected to the position of President of the Chamber of Commerce in Perth.

New Member of Council.—At the Pharmaceutical Council meeting held on August 29, the Returning Officer advised that the nomination of **Mr. C. M. Saunders** was the only one received to fill the vacancy caused by the resignation of Mr. E. J. Nicholas. Mr. Saunders was therefore declared elected.

THE GUILD

S.B.C. Meeting

The State Branch Committee of the W.A. Branch of the Guild met at "Guild House," 61 Adelaide Terrace, Perth, on September 9, at 7.30 p.m.

Present.—Messrs. G. D. Allan (Chair), R. W. Dalby, W. G. Lewis, S. J. Wilson, R. D. Edinger, G. H. Dallimore, R. I. Cohen, J. V. Hands, A. W. Bock, J. G. Skeahan, M. H. Arnold, H. J. Stone.

The President extended a welcome to Mr. H. J. Stone.

Election of President.—The President vacated the chair, and nominations were then called for the position of President. There being only one nomination, Mr. G. D. Allan was duly elected President for the ensuing year.

Vice-Presidents.—Three nominations were received for the position of two Vice-Presidents. Mr. Edinger explained that though he appreciated the honour he

found it too difficult at the moment to be absent from his pharmacy, and asked that his nomination be withdrawn. This was agreed to, and Mr. W. G. Lewis and Mr. S. J. Wilson were elected Vice-Presidents.

It was resolved that appreciation of the work carried out by Mr. Edinger while Vice-President be recorded in the minutes.

Treasurer.—Mr. R. W. Dalby was re-elected.

Federal Delegates.—Messrs. G. D. Allan and G. H. Dallimore were elected as Federal Delegates.

Chairman of Trade and Commerce Committees.—The appointment of Mr. M. H. Arnold as chairman of the Trade and Commerce Committee was confirmed.

Pricing Officers.—Mr. W. G. Lewis was appointed Pricing Officer and Mr. D. G. White Assistant Pricing Officer.

New Member Elected.—Mr. Peter Roy Merryweather, Bedford Park.

Branch Pharmacy: Mr. V. Cooper, Boans Waverley Store, Waverley.

Federal Delegate's Report.—Mr. Dallimore reported on the visit to the Guild rooms, by invitation, of the Commonwealth Minister of Health, Dr. Cameron, Dr. Metcalfe and Dr. Matheson. Matters discussed were the dispensing of P.B.A. and P.M.S. prescriptions in country hospitals, the removal of the sterilisation fee, and the advisability of giving legal recognition to the Standing Committee.

The Minister stated that the question of hospital dispensing was a State matter and should be handled as such. Regarding the sterilisation fee, the Guild was asked to present its case to Canberra. This also applied to the Standing Committee.

It was agreed that these two matters be handled by Federal Office. The Minister was given to understand that the Guild wanted to become more of a partner in the Health Scheme, and was willing to co-operate at all times.

A meeting of the Federal Executive would be held in Melbourne on September 17.

Pricing Officer's Report.—Mr. Lewis reported that copies of the dispensing fees had been sent to all chemists. One mistake appeared where a 2 oz. bottle was quoted at 2/-. This should have been a 20 oz. bottle. It was recommended that chemists' attention be drawn to the increased fees for ointments and creams.

Steadiflow feeding bottles were now Chemists' Only, but a new line in Truflow was to be placed on the market. This appeared to be a better line at a lower price, and it was suggested that the attention of the Federal Merchandising Department be drawn to the position.

Trade and Commerce Report.—A list of Chemists' Only counter lines is to be produced for issue to chemists. It will serve as a sales guide to counter assistants and apprentices.

Further discussion on recent "two for one offers" took place, and is to be referred to the State Branch Committee.

The possibility of a lecture to chemists on "Creative Selling" was discussed. The question of lectures by qualified people is now being pursued by Federal Office, and no further action by this committee is to be taken for the present.

Several facets of the Guild Advertising Scheme were discussed, and suggestions are to be placed before the State Branch Committee. The importance of chemists'

WESTERN AUSTRALIA—Continued

co-operation with point of sale and window displays and adequate stock coverage was stressed.

Methods of introducing to chemists and their staffs the forthcoming "Staff Training" brochure were discussed, and action is to be deferred until receipt of the brochure.

Unfair Trading Act.—The President reported that he had received a visit from a representative of the Unfair Trading Act Committee. A meeting was arranged for September 12. It was pointed out that this was not an inquiry, but the Committee were seeking information as to how chemists' dispensing fees were arrived at.

Tax Card Stands.—Following on the insertion of the advertisement featuring the tax deduction cards, the public were becoming more conscious of the advantage of buying their patent medicines from the chemist. Several chemists reported that the tax card stands were a distinct advantage, and it was decided that members be informed that the State Branch Committee were now in favour of chemists using these stands.

P.A.T.A.—As there is a vacancy for a chemist on the Council of the P.A.T.A., it was recommended that Mr. B. A. Illsley be appointed to the position.

Civil Defence.—In answer to a query, Mr. Allan reported that the Director of Civil Defence is to prepare an overall report, in which the pharmacist will be shown where he will fit into the plan.

Repatriation.—The matter of non-payment for preventive medicines written on a repatriation form was referred to Mr. Lewis to take up with the Department.

The meeting closed at 11.20 p.m.

PHARMACY THE PROFESSION

Snippets from an article by Dr. Rudolph H. Blythe, Director of Pharmaceutical Research, Smith, Kline & French Laboratories, published in "The New Jersey Journal of Pharmacy," July, 1958:

- Factors That Affect Pharmacy
 - There is an increase in population—at the rate of nearly two million per year. This is the result of increased birth rate, decreased mortality rate and continued immigration. More people mean more drug consumption.
 - On the negative side there are more supermarkets and these are siphoning off some of the sales of toiletries and a few other over-the-counter items.
 - There is a change of shopping pattern—better roads take rural people to more urban areas, and urban people with more money to spend are migrating to the suburbs. There is a trend toward shopping centres, each usually having its pharmacy. In the cities, physicians continue to concentrate in office buildings or areas with prescription stores in the neighbourhood. Each of you will have to study what effect any of these changes might have on a pharmacy in your community.
 - Pharmacists in general desire shorter hours. The number of new pharmacists and pharmacies are not increasing at the same rate as is the population.
 - The past 20 years has seen pharmacy sales increase 10-fold from \$169 million to \$1½ billion.
 - The majority of prescriptions cost less than \$2. Less than half of 1% cost over \$10.
 - In 1939 less than 12% of pharmacy's sales were in prescriptions. Last year over 24% of its business was in prescriptions, accounting for 40% of the pharmacist's profits.
 - There are many factors which will result in a decrease in the one-man store and an increase in the number of two-men or even larger stores.

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BM 6129

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William Pearce and Co. Pty. Ltd.

WHOLESALE DISTRIBUTORS OF ETHICAL DRUGS

For ACCURATE, PROMPT AND FRIENDLY SERVICE

"Distributors for Luitpold Werke, Munich. Manufacturers of SEMORI, CLAUDEN, HIRUDOID, COMBIZYN, MONOTREAN, PASPAT."

149 CASTLEREAGH STREET,
SYDNEY

TASMANIA

PERSONAL and GENERAL

State News

Members desiring publication of personal items of interest are invited to write or telephone details to the Journal Correspondent in Tasmania, Miss M. L. Williams, 276 Argyle St., North Hobart (phone B 1010).

Miss Margaret Purdon has recently returned from a holiday in Melbourne and Adelaide, and Mr. Ted Shields has been away for a week. Miss Marj. Williams is spending a fortnight at St. Helens.

The Mannequin Parade held at Highfield Hotel a few weeks ago by the Pharmacy students was a great success.

Congratulations to Mr. Lindsay McLeod on his appointment as Manager of Sidwell and Townley.

We are pleased to hear that Mr. D. Crisp and Mr. H. Pearce have recovered from their recent illnesses, also that Mrs. Des. Tapping is feeling well again.

Mr. Percy Roots has just returned from a holiday to the Barrier Reef.

We are sorry to report Miss K. Stannix is ill in the Launceston General Hospital.

Mr. F. Warland Browne took a trip to Cairns and spent some time in Manly before returning home.

Another Launceston pharmacist who is on holiday is Mr. W. Rumney, of George Town road.

Mr. Geoff Calver had an enjoyable car trip through Canberra, Sydney and back to Melbourne last month.

Mr. N. G. Dineen took a cruise to Cairns on the "Manoora" in August.

BIRTHS

Congratulations to the following parents:—

Mr. and Mrs. Ian Malcolm on the birth of their daughter—Robyn Alice.

Mr. and Mrs. Laurie Gluskie have a daughter—Penelope Rebecca.

Mr. and Mrs. Rudra Sharma also have a new daughter—Nalinie.

Rev. and Mrs. O. Heyward (nee Peggy Butcher) have another son—James Spencer.

Perhaps we will have a few more pharmacists in 1980.

PHARMACY BOARD

Monthly Meeting

The Pharmacy Board of Tasmania met at 85 Elizabeth street, Hobart, on August 13, at 8 p.m.

Present.—Miss M. L. Williams, Messrs. E. N. Lee, I. B. McLeod, T. A. Stephens, A. K. Smith, and the Registrar.

Chairman.—In the absence of the President (Mr. F. H. Cartledge), Mr. T. A. Stephens was elected to the chair.

Pharmaceutical Register.—Margaret Joan Courtney Beulke and Robert Charles Fuller (both from Victoria) were registered.

Apprentices.—Stuart William Hayward: Assignment of Indentures from Mr. W. Widdowson to Mr. N. E. Poynter was approved.

John Cornelius Wilson: Advice was received from the Pharmacy Board of Victoria that Mr. Wilson has entered into a four-year apprenticeship in Victoria and is attending first year lectures.

Finance.—Accounts totalling £71/8/- were passed for payment.

Poisons Bill.—Further correspondence was received from the Director of Public Health regarding a proposed amendment to control the use of Sodium Fluoroacetate.

Methylated Spirits.—Following a query from a Wholesaler of Methylated Spirits, the Board resolved that a three-cornered bottle that sloped to the neck and of clear glass be approved for the packing of Methylated Spirits for sale by retail.

The meeting further resolved that storekeepers be allowed to sell their existing stocks of Methylated Spirits on the consideration that they re-purchase only in the regulation bottle.

The Registrar advised that a complaint had been received that Pharmacists were selling Methylated Spirits in non-regulation containers. It was resolved that a circular be sent to all Pharmacists regarding this matter.

A letter from the Director of Public Health, stating that four wholesalers in Launceston were packing semi-poisonous liquids in assorted bottles, and asking that the Board consider taking action where necessary, was read. The Registrar was directed to write to each of the wholesalers concerned and point out the requirements for packing Methylated Spirits, stating that their co-operation would lessen the possibility of retailers infringing the Act.

The Registrar read a letter from a Southern Wholesaler, asking that an extension of time until January, 1959, be granted before enforcing the regulations regarding Methylated Spirits containers.—The Registrar was directed to advise that the only alleviation the Board would allow was for retailers to dispose of existing stocks.

The meeting resolved that advice be sent to certain wholesalers regarding containers for Methylated Spirits.

Sale of Bex Tablets by Stores and Hotels.—The meeting resolved that this matter be deferred.

Inspections.—It was resolved that an inspection be made of Pharmacies whilst in the Northern area. The scope to be covered being to see the Registered Pharmacist on the premises and ask for and see the current Annual Certificate, pointing out the requirements of the new amendment to the Pharmacy Regulations that is in the process of being gazetted regarding the display of the Annual Certificate.

The meeting closed at 9.10 p.m.

SEPTEMBER MEETING OF PHARMACY BOARD

The Pharmacy Board of Tasmania met at 85 Elizabeth street, Hobart, on September 10 at 8 p.m.

Present.—Mr. F. H. Cartledge (Chairman), Messrs. E. N. Lee, I. B. McLeod, T. A. Stephens, A. K. Smith, and the Registrar.

Board Membership.—Resignation of Mr. A. G. Gould: The Registrar read a resignation from Mr. A. G. Gould. Mr. Lee moved, seconded by Mr. Stephens, that the resignation be accepted with regret.

The Registrar was directed to write to Mr. Gould and advise him that the Board accepts the resignation with regret and hopes to see him back on the Board at a later date when he sees his way clear.

The question of a new member for the Board was deferred to the next meeting.

Pharmaceutical Register.—Miss Joan Miller (from Great Britain), Mr. Morris John East (from Great Britain), Mr. Frank Knighten Simpson (from Great Britain), and Mary Louise Walker (from N.S.W.) were registered.

Mrs. Gwenyth Irene Bennell: Application for re-registration was approved.

Finance.—Accounts totalling £182/11/2 were passed for payment.

Pharmacy Act.—D. C. Gurr, partnership with spouse: The Registrar read a letter from Mr. H. S. Baker, the Board's solicitor, advising that the Police Magistrate had given his decision in the favour of the Board and had ordered Gurr to pay £7/7/- costs, together with Court costs.

TASMANIA—Continued

Pharmacy Regulations and Amendments.—A request was read from the Parliamentary Draftsman asking that the proposed amendments to the Pharmacy Regulations be discussed with that Department's legal officer, Miss Smith.

The meeting resolved that Mr. Lee and the Registrar interview Miss Smith regarding this matter.

Poisons Act.—An application for a Poisons Licence from Mr. M. Jacob of the refreshment counter at the Hobart Airport, Llanherne, was read.—Application granted.

Report of Antibiotics Committee.—A report from the Antibiotics Committee regarding the use of antibiotics in agriculture as forwarded by the Director of Public Health was received.

Draft Dangerous Drugs Bill.—This matter was carried forward to the next meeting.

Dangerous Drugs File.—The Registrar advised that the Board's Inspector had queried whether it was necessary to keep a separate file for dangerous drugs as under Regulation 94 (J) of the Poisons Regulations.

The Registrar was directed to advise that this was not necessary.

Inspector's Report:

Methylated Spirits.—The Inspector's report on this matter was tabled by the Registrar.

The Registrar advised that of 67 Northern Stores inspected, only four complied fully with the provisions of Section 19 of the Poisons Act 1916 regarding the container and labelling for Methylated Spirits. Of the remainder, 21 complied with provision of the container only, the balance of the stores only complying with one of the requirements of the label regarding the name of the substance.

Whilst in Launceston the Board Inspector had interviewed Mr. W. J. Bradford, General Health Officer. It was resolved that Mr. Bradford be appointed an Inspector of the Board for a period. The Registrar was directed to forward to Mr. Bradford the necessary extracts from the Inspector's report regarding this matter.

Northern Pharmacies.—The Registrar advised that 51 Northern Pharmacies had been inspected by Mr. Jelfs. Only 34 Pharmacists were able to produce their Annual Certificate. In three instances the Annual Certificate was already displayed.

The Registrar advised that of the balance who could not produce their Annual Certificates, four were in the process of transfer, thus leaving 13 unable to produce certificates.

The Inspector had reported that Mr. R. A. Larke, of 28 Wilson street, Burnie, was absent from his pharmacy and Mr. Leith, of Melbourne, was in charge. As Mr. Leith was not registered in Tasmania the Registrar was directed to write to Mr. Larke and ask why the Board had not received a notice of the employment of a reliever and explain why there was not a Registered Pharmacist in charge of the shop.

Syllabus.—Advice was received from the Pharmaceutical Society of Tasmania that it was impossible to establish tuition for students in Launceston. It was further advised that a two-year full-time course was being contemplated.

Personal.—The Registrar was directed to write to Mr. D. W. Tapping, former Registrar of the Board, and express regret in the passing of his father.

The Meeting closed at 10 p.m.

PHARMACEUTICAL SOCIETY

Council Meeting

The Council of the Pharmaceutical Society of Tasmania met at 85 Elizabeth street, Hobart, on September 8, at 6.15 p.m.

Present: Mr. L. J. McLeod (Chairman), Miss M. E. Purdon, Messrs. E. H. Shield, D. Tremayne, C. A.

Robertson, W. G. Webb, B. J. Shirrefs, and the Secretary.

The President extended a welcome to Mr. D. Tremayne, who has taken the place of Mr. Brammall on the Council.

General Meeting.—The Secretary reported that arrangements had been made for the general meeting on September 18, at the new Girl Guides' rooms, and that Dr. N. D. Abbott would be the guest speaker, his subject being "Law and the Daily Task."

Full-time Pharmacy Course.—The Director of Education had acknowledged the Society's letter regarding this proposal, and the Superintendent of Technical Education had requested details of the anticipated annual intake of pharmacy students under the proposed new course.

The average intake over the past three years, including transfers from the north, had been 13 apprentices, and at present there are 43 students studying pharmacy. It was anticipated that more students would be transferring from the north under a two-year full-time course. It was therefore decided to advise the Superintendent that an intake of approximately 15 apprentices, increasing to 20 in the next few years, was anticipated.

The meeting decided that the following members would form the deputation to see the Director:—Messrs. L. J. McLeod, B. J. Shirrefs, E. H. Shield and Dr. J. C. Burgin.

Address by Mr. Shirrefs.—The meeting decided that the address given by Mr. Shirrefs on the course of instruction he received at Macedon Civil Defence School should be duplicated and forwarded to all members.

Financial.—Accounts totalling £13/1/- were passed for payment.

The meeting closed at 6.50 p.m.

THE GUILD

Annual Meeting

The annual general meeting of the Tasmanian Branch of the Guild was held at 93 Davey street, Hobart, on August 28, 1958, at 8 p.m.

Present: Mr. G. M. Fleming (Chairman), Miss N. L. Gibson, Messrs. A. G. Crane, A. G. Gould, I. R. McIntosh, C. A. Robertson, A. Fennell, C. B. Dillon, T. A. Stephens, O. K. Colman, E. H. Shield, E. J. Bourke and the Secretary.

After the Secretary had read the notice convening the meeting, the minutes of the previous annual general meeting, held on August 22, 1957, were read and confirmed.

Annual Report.—The annual report having been circulated, was taken as read.

Mr. Fleming, in moving its adoption, said he considered that the past year would prove to have been a landmark in achievements of the Guild. The Federal Officers had played a great part during this year in various negotiations. Now the new plan for the Publicity and Merchandising Scheme was about to come into operation, and the Federal President considered this would protect pharmacy for many years to come from the inroads they were at present encountering.

He expressed appreciation of the assistance the Branch had received from the Federal Officers, Mr. Evans, Mr. Ross and Mr. Attiwill. The supplements published by Mr. Attiwill were a great accomplishment, and had done much for the good of pharmacy.

In conclusion, Mr. Fleming thanked members of the State Branch Committee for their co-operation, and expressed appreciation of the great harmony which existed throughout the year.

In the absence of the Treasurer, the Secretary reported on the financial statements, drawing attention to



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NIVEA introduces

- GIANT-SIZE ECONOMY PACK
- BOOSTS ADVERTISING CAMPAIGN
- CREATES ALL-YEAR-ROUND DEMAND

SALES are CLIMBING. Now is the time to get on the band wagon and cash in on Nivea's 1958 super promotion. The new giant-size economy pack is a winner! Tins, tubes and bottles wear the new easy-to-sell look. Really Selling Advertising is bigger and better than ever . . . press, radio, display, point of sale . . . all will create sales traffic . . . make profits for you. Stocks are right, prices appealing, mark-up excellent, parcel discounts generous . . . so move in **NOW** to catch the profits on Nivea, the all-year-round world-famous seller.

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TASMANIA—Continued

the fact that the surplus from the year's activities had come from the pricing service.

Mr. Gould, in seconding the adoption of the annual report, expressed appreciation of the response by members to the Publicity and Merchandising Plan, which he considered had a great potential as a co-operative undertaking. To make the scheme a real success, it was essential that they should have 100 per cent. response from members. With this in view, he stressed the necessity for bringing the remaining few members into the scheme.

The report and the financial statements were adopted unanimously.

State Branch Committee.—The Returning Officer, Mr. C. A. Robertson, reported the following result of the ballot for election of five Southern and three Northern representatives to the State Branch Committee:—

Southern	Northern
K. H. Jenkins	36
L. W. Palfreyman	35
A. G. Gould	34
E. H. Shield	32
C. B. Dillon	23
O. K. Colman	23
E. J. Bourke	12
J. B. Warland	28
G. A. Calver	25
N. G. Dineen	25
F. H. Cartledge	21

Mr. Robertson stated that 80 per cent. of members voted in the Southern District and 67 per cent. in the Northern District.

The President then declared elected Messrs. K. H. Jenkins, L. W. Palfreyman, A. G. Gould and E. H. Shield for the Southern District, and Messrs. J. B. Warland Browne, G. A. Calver, N. G. Dineen for the Northern District.

A further ballot would be necessary to determine whether Mr. Colman or Mr. Dillon would fill the fifth seat from the Southern District.

Auditors.—Messrs. Bumford and Walter were re-elected.

Federal Trade and Commerce Meeting.—Mr. Fleming stated that the Branch was very ably represented at this meeting by Mr. J. B. Warland Browne, and Mr. C. A. Robertson, convener of the Sub-committee, then gave a report on the items discussed at this meeting.

Pricing Officers' Conference.—Mr. Fennell gave details of matters discussed at the Pricing Officers' Federal Conference, and referred to the remit this Branch was submitting to the Federal Council, asking that they take over all pricing services.

He drew attention to the price cutting which was taking place at the present time in soaps, and advised members to buy carefully and to have nothing to do with the two-for-one offers, which were contrary to Guild policy.

Leukoplast.—Mr. Shield suggested that more detailing should be done by Cadus traveller in regard to promoting sales of Leukoplast, which was considered to be of excellent quality.

President.—Mr. Fennell expressed appreciation of the very capable leadership which Mr. Fleming had given to the Branch over the past five years whilst he had been President, and hoped that he would be able to continue in this capacity in the future.

Members expressed their appreciation with acclamation.

The meeting closed at 9.30 p.m., and supper was served.

ANNUAL REPORT OF NORTHERN TASMANIAN BRANCH

The report of the Executive Committee on activities of the Northern Branch for the year 1957-58 shows that three new members were enrolled. Membership is thus at a very high level, there being only one eligible chemist in the north a non-member.

During the year six meetings were held, and these

were fairly well attended. At the earliest of these, on July 24, 1957, a presentation was made to retiring member Mr. C. O. Holmes in recognition of his services to the Guild over many years in various offices. Mr. Holmes' wise leadership and active participation in Guild affairs was well known, and his retirement would be a great loss to the Northern committees.

Merchandising.—In June, 1958, the merchandising manager, Mr. Ross, and Public Relations Director, Mr. Keith Attiwill, addressed a meeting of 22 members in Launceston. The plan for the proposed Commonwealth-wide Publicity and Merchandising Scheme was outlined and explained, and was enthusiastically received by members, who expressed their willingness to subscribe as recommended by Federal Council. Collections from members have already commenced and submissions by the advertising agency to the State Committee approved. It is expected that the programme of advertising will commence in October.

Price Lists.—The subject of retail price lists is still a worry to members, and is at present the subject of a remit to Federal Council in October, suggesting that the possibility of establishing a Federal list be explored and pursued.

The report is signed by the President of the Northern Branch, Mr. George Copeland, who concluded by recording that the work of the elected officers was made the easier by the co-operation of members. Continued interest in Guild affairs was necessary if they were successfully to fend off the many threats to their organisation today. The impact of hostile opposition in business by non-pharmaceutical competitors was real and powerful, and the Guild is the only body capable of handling this problem in the wide field into which the fight had been taken. He exhorted all members to give the Guild their full support in the work which their officers were doing. With this support they could continue to provide an example to other organisations in Australia and in other parts of the world.

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Offer is limited! Act now! Send in your Californian Poppy order to-day! Get your full profit share from Australia's fastest selling, best advertised light-oil hair dressing!

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ATKINSONS CALIFORNIAN POPPY 40-BOTTLE DISPLAY PACK

PRICE

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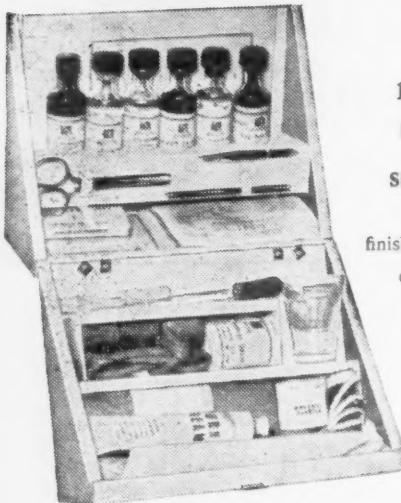
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NEW SOUTH WALES—Continued

PHARMACY BOARD OF NEW SOUTH WALES

List of successful candidates at the Qualifying Examination held on July 29, 1958, and subsequent days:—

ARMSTRONG, Kathleen Mary	KEVANS, John Joseph James
BARKER, Noemi Loretta	LAZZARINI, Robert
BARNES, Robert Guy	LINDSAY, Phillip John
BATHGATE, Bruce Fyfe	LUCAS, Andrew Michael
BEARUP, Robert John Bowman	LUMSDEN, Lachlan Andrew Douglas
BLAXLAND, Richard Edward Tremayne	MC AULEY, Bryan Sydney
BLONSKY, Serge	MC CONVILLE, Peter William
BORSKY, Jan	MC DONOUGH, John Tevlin
BUNDY, Jill Lynette	MC FARLANE, Ian Charles
BUZACOTT, Helen Edith	MC GLOIN, Margaret Anne
BYRNE, Erol Francis	MC LEAN, Edith Marion
CALMAN, David Thomas	MC NAMARA, Dominic William
CASSIDY, John Joseph Charles Anthony	MACINANTE, Laurence
COCHRANE, Margaret Anne	MACMAHON, Owen Louis
COLE, David Edwin	MAGUIRE, Brian Joseph
COLLINS, Ursula Dorothy	MARTIN, Peter Thaw
CONFOS, Anthony George	MATTHEWS, Betty Maree
COX, Laurence David	MEGGITT, Anita Joyce
CUSKELLY, Michael Leo	MEIKLE, Margaret Nassie
DAVENPORT, Christopher Ernest Bromley	MEYERS, Merrilee
DICKINSON, Sandra Lynette	MILLER, Barrie Raymond
DONALD, William David	MILLS, John Douglas
DONNELLAN, Camille Ellen	MOFFATT, Ian Barton
DRISCOLL, Michael Francis	MURPHY, John Peter
DUANE, Matthew Thomas	MUSGRAVE, Nonna
DUBRAVCIC, Libusa	MUSGROVE, Howard William
DUNNE, John Charles	MYLOTT, John Roch
EDWARDS, Peter Michael	O'REILLY, Peter William
FITZGERALD, John Matthew Patrick	OSBORNE, Anthony William Bruce
FITZGERALD, Maxwell Bradford	O'SULLIVAN, Jill Belle
FLANAGAN, John Andrew	O'TOOLE, Graham Bruce
FONG, Pamela Margaret	PAGE, Catherine Mary
FURLEY, James Richard	PEARCE, Walter William
GARDINER, Richard Hamilton	PLATT, Robin Margaret Ingleson
GAULTON, Elsie Olwen	PULLE, Carole Ann
GEE, Shelley Margaret	RE, Lilia Veronica
GERRETT, Lesley Joan	REINHARDT, Marion Maisie
GILBERT, Graham Brooks	RENNIE, Peter Elliott
GOLD, Judith	ROCHE, Barrie Alan
GOSTELOW, Geoffrey Charles	ROLLESTON, John Philip
HARBISON, Helen Jean	RYAN, Anthony Alexander
HARDIE, Patricia	RYAN, John Allan
HARPER, Geoffrey Maxwell	RYAN, Michael John
HAVILAH, William Brian HEFFERNAN, John Patrick	SAUL, Edward
HEGYI, Eva Veronika	SHANNON, Anne Therese
HOLLAND, Ross William	SPARROW, John William
HOLME, Beatrice Carmen HOUGH, Stanley Allen	SUEN, Valerie
HOUSTONE, Angus Bayley	THEW, Kerry Colefax
HURD, Graham Frederick HURT, Wilga Grace	TILLER, David John
JAMES, Barry Stuart KELSO, Valerie Hastings	TONNER, Patrick Anthony
KEMP, Robert Joseph	TURNBULL, John Baylee
	WARNOCK, Rodney Watt John
	WEBB, Margaret Laura
	WEBB, Robert Henry
	WELLHAM, Barry Septimus
	WHITING, Barbara Mary
	WILSON, James Leonard
	WYLLIE, Peter Muir

PRIZES AWARDED, 1958

The following prizes and medals for 1958 have been awarded:—

Society's Gold Medal (Mr. M. R. Byrnes, 1 Alma Street, Ashfield)

1. Must be gained by a student at the first attempt.
2. He must obtain a pass of 75 per cent. or more in each subject.
3. The medal is given to the best pass at either examination.

McCrory Medal (Miss Janet Hume, 218 Bathurst Road, Blackheath)

The John McCrory Medal for dispensing, awarded to the candidate who passes the final examination at the first attempt, who obtains a pass percentage of 75 per cent. or more in practical pharmacy.—Medal.

D.H.A. Prize (Mr. M. R. Byrnes, 1 Alma Street, Ashfield)

The D.H.A. prize, awarded to the candidate who is successful at the first attempt, and who gains the highest aggregate marks at the final examination out of the successful candidates presenting themselves for the first time.—Books to value £25.

Kodak Prize No. 1 (Mr. F. G. Humphrey, 781 Rocky Point Road, Sans Souci)

The Kodak Prize No. 1, awarded for practical pharmacy based on the student's practical work in the final examination and during his university course.—Cheque for £25.

Kodak Prize No. 2 (Mr. G. Graham, 120 Woniora Road, South Hurstville)

The Kodak Prize No. 2 awarded for general proficiency shown throughout the whole pharmacy course at the University, Sydney.—Cheque for £25.

PROSECUTIONS UNDER THE POISONS ACT

Name and Offence	Court	Fine	Costs
Sloane, B., 118 Crown street, Wollongong.—Sale of restricted drug without a prescription	Wollongong	£10	£1
Sloane, B., Wollongong.—Failure to attach label to drug	Do.	£5	£1
Ferguson, W. T., 103 Crown street, Wollongong.—Sale of restricted drug without a prescription	Dd.	£10	£1
Ferguson, W. T., Wollongong.—Failure to attach label to drug	Do.	£5	£1
Gudgeon, M. R., 60 Crown street, Wollongong.—Sale of restricted drug without a prescription	Do.	£10	£1
Gudgeon, M. R., Wollongong.—Failure to attach label to drug	Do.	£5	£1
Walden, A. R., 191 Maitland road, Mayfield.—Sale of restricted drug without a prescription	Newcastle	£5	£1
Walden, A. R., Mayfield.—Failure to attach label to drug	Do.	£5	£1
McCready, C. L., 396 Maitland road, Mayfield.—Sale of restricted drug without a prescription	Do.	£5	£1
McCready, C. L., Mayfield.—Failure to attach label to drug	Do.	£5	£1
Pitcairn, D. J., 101 Pacific Highway, Swansea.—Sale of restricted drug without a prescription	Belmont	£4	£1
Pitcairn, D. J., Swansea.—Failure to attach label to drug	Do.	£4	£1

PHARMACY BOARD

Monthly Meeting

The Pharmacy Board of New South Wales met at 52 Bridge street, Sydney, on August 12, at 8 p.m.

Present.—Mr. C. G. Gostelow (President), Messrs. G. C. Simpson, L. W. Smith, G. R. Mallam, K. E. Thomas, Dr. S. E. Wright, and Messrs. K. Cartwright and G. Harman.

Election of President.—By unanimous vote Mr. C. G. Gostelow was elected as President for the ensuing year.

Publicity in Trade Journals.—The Registrar was directed to arrange for the publication in trade journals of the names and addresses of persons who had already been convicted for offences under the Poisons and Pharmacy Acts.

Inspections.—The Registrar was requested to make representations to the Department for the appointment of an additional Inspector, or the appointment of Mr. Browne to full time duty as Inspector under the Pharmacy and Poisons Act.

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Literature and professional samples on request.

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For faster sales

With $\frac{3}{4}$ in. price stripping in White and Cream.

Plastic price tickets in contrasting colours of Black, Blue and Red.

SPECIAL CHEMIST'S SET

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Comprising 100 ft. $\frac{3}{4}$ in. plastic price stripping plus 50 dozen assorted plastic numbers and signs.

NOTE OUR PRICE: the lot £4.4.0d.

COLOURED INSERT FOR ABOVE STRIPPING
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Box 3616, G.P.O., Sydney

NEW SOUTH WALES--Continued

Applications for Registration were approved as follows:

(1) Having passed Qualifying Examination: Reginald Lister Renger, Maxwell Colin Schieb, Shirley Mary George, Pamela June Hall, Julia Margaret Richards, Richard Joseph Arthur, and Barbara Joan Beddie.

(2) By reciprocal agreement: Charles John Parkin (from Victoria) and Antonio Salvatore Pisasale (from Victoria).

Names Restored to Register.—Betty Patricia Allen, Mona Madeline Wallace, and Luigi Giuseppe Cristaudo.

Poisons Act.—Deaths from the following poisons had been reported since last meeting, viz.: Nicotine, 2; Codein Phosphate, 1; Barbiturates, 1; Parathion, 1; Carbital, 1; Hydrochloric Acid, 1; Chloral Hydrate, 1; Arsenic, 2; Strychnine, 1.

Leaving Certificates Accepted.—220.

Apprenticeship Indentures.—Registrations comprised two new indentures, four transfers, two cancellations, one extension and one resumption.

Correspondence.—The Registrar was requested to furnish Pharmaceutical Defence Limited (N.S.W. Branch) with the information sought in preparation of a booklet.

The Poisons Advisory Committee replied to the Board's recommendations.—The Board noted the proposals regarding the control of Ephedrine, Dextrorphan, Dextromethorphan and Teething Powders containing Calomel.

The University of Sydney wrote in reference to concessions to persons having foreign qualifications in Pharmacy.—The Registrar undertook to furnish a suitable reply.

From Pharmaceutical Association of Australia in regard to supply of Rectified Spirit.—It was decided to inform the Association that the Board considers that the present allowable quota of two gallons per month was reasonable and should not be altered, and that the Customs Department should investigate any alleged cases of malpractice.

Dealing with the training of Pharmacists, the Under Secretary advised that May 1, 1959, would be the date from which the 1952 Amendment to the Act would be brought into force.

An inquirer sought information on the control of a product containing chloroform (B.P.).—To be informed that this product was controlled by the Second Part of the First Schedule.

Control of Parathion.—It was resolved—

- (1) That the Board should again request the Poisons Advisory Committee to give attention to the matter of stricter control of Parathion, in view of recent deaths which have occurred from the use of this poison.
- (2) That this Board considers that the Poisons Act is deficient in that it does not make provision for adequate control of specific poisons stricter than by inclusion in Schedule 1, First Part (e.g., Thallium, Fluoroacetic Acid and Parathion).
- (3) That the Poisons Advisory Committee be requested to express its views on the desirability or otherwise of pressing for the adoption of the Commonwealth Uniform Poisons Act now under consideration.

SEPTEMBER MEETING OF PHARMACY BOARD

Meeting held September 9, 1958.

Present.—Mr. C. G. Gostelow (President), Mr. L. W. Smith, Dr. S. E. Wright, Messrs. E. Dempster, G. C. Simpson, G. Harman, K. E. Thomas and G. R. Mallam.

Inspector's Reports.—It was directed that the results of prosecutions should be publicised.

Applications for Registration were approved as follows:

(1) Having passed Qualifying Examination: Melvyn Roger Byrnes, Terence James McCarthy, Ian William Napper, Kathleen Mary Armstrong, Robert John Bowland Bearup, Serge Blonsky, Graham Patrick Lynch, John Patrick McKenna, Raimonde Margaret Mary Reilly, Bruce Fyfe Bathgate, Richard Edward Tremayne Blaxland, Jill Lynette Bundy, Helen Edith Buzacott, David Thomas Calman, David Edwin Cole, Christopher Ernest

Bromley Davenport, Michael Francis Driscoll, Libusa Dubravcic, Peter Michael Edwards, Maxwell Bradford Fitzgerald, James Richard Furley, Elsie Olwen Gaulton, Geoffrey Charles Gostelow, Patricia Hardie, William Brian Havilah, Stanley Allen Hough, Graham Frederick Hurd, Robert Lazzarini, Bryan Sydney McAuley, Dominic William McNamara, Owen Louis MacMahon, Margaret Nassie Meikle, Barrie Raymond Miller, Ian Barton Moffatt, Howard William Musgrave, Peter William O'Reilly, Walter William Pearce, Marion Maisie Reinhardt, Barry Alan Roche, John Allan Ryan, Anne Therese Shannon, Valerie Suen, David John Tiller, John Baylee Turnbull, Margaret Laura Webb, Lesley Joan Gerrett, Betty Maree Matthews, Erol Francis Byrne, John Joseph Charles Anthony Cassidy, Michael Leo Cuskelly, William David Donald, Matthew Thomas Duane, John Charles Dunne, John Matthew Patrick Fitzgerald, John Andrew Flanagan, Richard Hamilton Gardiner, Shelley Margaret Gee, Helen Jean Harrison, Geoffrey Maxwell Harper, Eva Veronika Hegyi, Angus Bayly Houstone, Wilga Grace Hurt, Andrew Michael Lucas, John Tevlin McDonough, Laurence Macinante, Brian Joseph Maguire, Merrilee Meyers, John Douglas Mills, (Mrs.) Nonna Musgrave, John Roch Mylott, Jill Belle O'Sullivan, Robin Margaret Ingleson Platt, Peter Elliott Rennie, Anthony Alexander Ryan, Michael John Ryan, John William Sparrow, Kerry Colefax Thew, Patrick Anthony Tonner, Rodney Watt John Warnock, James Leonard Wilson, Peter Muir Wyllie, and Lilia Veronica Re.

(2) Registration under Section 11 (2): Jan Borsky.

(3) By reciprocal agreement: (Mrs.) Maryla Hylston (from Victoria), Peter Liam Hickey (from Queensland), and Joseph Edward Phelan (from Queensland).

Name Restored to Register.—Elsie Foster.

Certificates of Identity.—The Board approved the issue of Certificates of Identity to Robin Irvine Sillar (to Great Britain), David Bruce Wellington (to Tasmania), Poppy Harris (to Great Britain), Cecil Reginald Patchell (to Great Britain), Alan John Pappas (to Great Britain), Shirley Elizabeth Crennan (to Great Britain), and Joseph Anthony Papalia (to Great Britain).

Poisons Act.—Deaths from the following poisons had been notified since last meeting, viz.: Parathion, 2; Carbital, 3; Quinidine, 1; Sulphur Drug, 1; Arsenic, 2; Barbiturates, 2; Thall Rat (Thallium Sulphate), 1.

Leaving Certificates Accepted.—Two.

Apprenticeship Indentures.—Registrations comprising eight transfers, three cancellations and one resumption.

Qualifying Examination.—The Report by Examiners on the result of the August Qualifying Examination was noted.

Non-submission of Training Reports.—It was decided that a further seven days' grace be given to seven first-year students. As regards another student, a prosecution was authorised.

Non-submission of Statistical Information Required Under Regulation 75.—The Board authorised the Registrar to write to all persons who had not submitted the necessary information, giving them a further 14 days in which to comply. He was further authorised to take legal action in the event of non-compliance.

PHARMACEUTICAL SOCIETY

Council Meeting

The Council of the Pharmaceutical Society of New South Wales met at "Science House," Sydney, on September 2, at 7.45 p.m.

Present: Councillors K. H. Powell (chairman), K. A. Cartwright, M. Sweeney, H. W. Read, B. G. Fegent, A. F. Winterton, W. R. Cutler, G. G. Benjamin, S. Palfreyman and S. E. Wright.

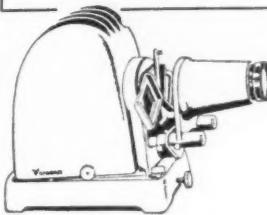
Lecture on the B.P.—Stawell Hall, September 22, by Dr. S. E. Wright.

Lecture—The Chemotherapeutics of Cancer.—By Mr. Barry Brown, in the Stawell Hall, Macquarie street, Sydney, October 28.

Lecture at Katoomba.—Mr. Powell said he had not yet found the opportunity to arrange this.

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NEW SOUTH WALES—Continued

First Year Apprentices' Examination, 1958.—Mr. Powell said that the examination had been held at the Great Hall on August 26.

An examination paper had been found in the Great Hall and had been sent in by the Registrar.

Presentation of Registration Certificates (second ceremony) would take place on October 21. All Councillors were invited to attend the ceremony and supper afterwards.

Mr. Mitchell, of Kodak, and Mr. Clive Catt, of D.H.A., were to be invited to the ceremony and the supper.

Through the President of the Pharmacy Board, an invitation had been extended to members of the Board to attend the presentation ceremony.

A.N.Z.A.A.S. Conference, Adelaide, August, 1958.—Councillor Sweeney said that four papers had been read relating to hospital pharmacy.

Mr. Footitt, of the Royal Perth, submitted an interesting paper comparing English and Australian hospital pharmacy.

Mr. Stewart, of the Newcastle Hospital, gave details of an "imprest" system for supplying articles to the wards. The cupboards were replenished by restocking with the exact amounts issued from time to time.

Mr. C. B. Macgibbon (Vic.) dealt with rates of pay.

Several papers by the manufacturers were of interest—one dealt with matters of topical interest, one on worms.

The University of Sydney delegation presented a large number of papers.

Dr. Wright said that Section "O" was getting better each time; it was a family affair now.

In relation to practical papers, the evening session was very good.

The next A.N.Z.A.A.S. Conference would be in Perth in August, 1959. In four years' time it would come to Sydney, and N.S.W. would be able to do a good job. At Adelaide the social amenities were of a high standing. The Society had put on a dinner dance.

It was stated there were two opinions regarding immediate practical and visible benefits of the holding of the meeting of Section "O." A decision in this regard could be made when it came round again.

Papers read at the conference by personnel of the Department of Pharmacy had been handled very well indeed.

Mr. Lloyd had presented a paper on radioactive isotopes. Hospital pharmacists should have knowledge of them.

A suggestion had been made that the date of the P.A.A. Conference, Adelaide, be altered to August, so that persons so desirous could attend both the meeting of the P.A.A. and the meeting of Section "O."

Mr. Cutler said: "We were always proud to see the Society represented at the conferences. You do gain from hearing the papers read."

Dr. Wright referred to the imponderable knowledge gained. The contacts established were well worth while.

Mr. Fegent said it was essential to be represented at these conferences.

Mr. Read: "I support representation, too."

Dr. Wright: "It provides a stimulus for pharmaceutical education in Australia."

Councillor Sweeney: "What is the date for the P.A.A. meeting in Adelaide?"

Mr. Powell: "It depends on the P.A.A."

"Call."—The total amount of the "call" collected to date is £4181/2/-.

Correspondence.—Chief Secretary's Department, advising that the question of amending the Weights and Measures Act to permit the use of metric system for pharmaceutical purposes has been noted.—Received.

The Acting Vice-Chancellor, University of Sydney, acknowledging receipt of cheque for £1000 as a donation towards the equipping of the Pharmacy Laboratories.—Received.

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Mr. K. J. C. Johnson, chairman, Committee Institutional and Industrial Pharmacists' Group, submitting a brief report on recent activities of the group. Councillor Wright said the Secretary was Miss Simon.

Digest.—It was decided to have a meeting of the Editorial Committee on September 8, at 8 p.m.

General.—Mr. Winterton said anent the Health Week Council meeting, Mr. Slough had approached him on the subject of a Poisons Bureau.

The Health Department had approached us to step up our campaign. The theme for Health Week this year would be "Safety in the Home."

It was reported that Mr. E. C. Thomas, of Balgowlah, had passed away. A letter of condolence to be sent to Mr. R. E. Thomas.

Mr. Powell said he had received a letter from Mr. Keith Attiwill relating to Health Week. It was decided to write to Mr. Attiwill, stating Council agreed that publicity could be got for the Society during Health Week.

New Members Elected.—Manuel Halicas, Reginald (Rex) Howarth, Kenneth James Cairns Johnson, Alfred William Lewis, Alexander McCulloch, John Patrick McKenna, Eric Bargman Pollard.

Associate Members.—Miss Penelope Alidenes, Ian Anderson Mackay.

Finance.—Accounts paid totalling £1,164/18/5 were confirmed. Other accounts totalling £644/12/9 were passed for payment, and it was further resolved that accounts drawn on the Chemists' Ball account, totalling £691/7/9, be paid.

The meeting terminated at 10.4 p.m.

THE GUILD

Annual Meeting

The Thirtieth Annual General Meeting of members of the Federated Pharmaceutical Service Guild of Australia (New South Wales branch) was held at the Stawell Hall, 145 Macquarie street, Sydney, on August 18th, 1958, at 8 p.m.

Present.—There were 52 members present, with Mr. Leslie W. Smith, State President, occupying the Chair.

Minutes of Previous Annual General Meeting.—The Chairman said he had perused the minutes of the Annual General Meeting held on August 30th, 1957, and proposed to sign them as a correct record. The meeting agreed with this course.

Country Members.—The Chairman extended a welcome to representatives of the Newcastle and Hunter Valley Pharmacists' Association, Messrs. Neil Smith, Sam Morris and Harold Menson.

Annual Report, Balance Sheet and Accounts.—The Chairman dealt briefly with some items in the Annual Report. He then moved the motion that the Annual Report, Balance Sheet and Accounts be adopted. The Treasurer, Mr. R. Feller, seconded the motion.

Mr. Goldman enquired regarding the item of "Printing and Stationery" on the expenditure side of the account.

The Secretary explained that the item "Printing and Stationery" included the summary of the Regulations under the National Health Act, etc., which had been sent out for incorporation in the official instructions to chemists.

Mr. Loxton referred to the "Gilseal News" and queried whether the publication was worthwhile.

Mr. Long said the only article worth reading was the letter from the Public Relations Secretariat.

Mr. Joe Finn said he thought that the publication of "Gilseal News" was essential. However, the present News lacked vitality. It should be improved and peped up rather than abolished. Possibly it could be handed over to publishers with advantage, who would be responsible for the gathering of articles to publish in it.

Mr. Smith said the Committee would look into the suggestion made by Mr. Finn, which was a very good one.

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NEW SOUTH WALES—Continued

A member enquired the Guild's attitude re Ipana Pick-a-back stunt.

Mr. Feller said that the Federal Council had disqualified any form of two-for-one offers.

It was a dangerous precedent; the Federal Council was opposed to all two-for-one offers. However, the Federal Council did not object to the giving away of a separate and bona fide sample.

A member said that problems met with in the zones could be cleared up by matter published in the "Gisela News".

A member referred to Coronet soap, two cakes for one, and also Cashmere Bouquet, two cakes of the small size banded together. Also there would be pre-packed soap in various colours which meant an increase in the chemist's inventory. Heinz goods were also discussed.

Dealing with collections for the Medical Benefits Fund and the Hospitals Contribution Fund, Mr. Sapsford said that the monthly collections had not yet been introduced, due to delay on occasion of the new scheme for people over 65 years of age, etc. The two Funds had been persuaded to agree to the introduction of collections at monthly rests. At present both Funds had agreed to this and it would commence probably in January next. A minimum collection of one month. There would be four tables, 1/6, 2/-, 3/- and 4/-. The tables would be printed on cards showing the exact amount of the contribution to collect. The monthly minimum collection would effect actually a better deal from the present commission.

A member said that in South Australia 10 per cent. commission was paid.

Mr. Sapsford said he considered that the Funds would not raise the commission in N.S.W. The Funds fell back on the Government and said they were not allowed to expend more than 15 per cent. in running expenses.

A member raised the point that where a pharmacist or his staff had wrongly entered a contributor's book, the Fund refused payment on the grounds that the contributor was in arrears and unfinancial. This was quite unfair to a contributor who was not responsible for the alleged unfinancial state.

Mr. Smith said this would have to be looked into to see if it was legal for the Fund to refuse payment. He asked that details be sent to the State Branch Committee, in order that it could be taken up.

Mr. Sapsford suggested that a pharmacist who came across this difficulty should ring Mr. Cade, of the Medical Benefits Fund, and tell him what had happened. He considered that the contributor would be treated in a tolerant manner. Ring up Mr. Cade, of the M.B.F., or Mr. Miller, of the H.C.F.

Mr. Finn said that the H.C.F. and the M.B.F. should be prepared to honour bona fide mistakes made by their agents.

A member enquired if Scherings had agreed to make credit for Steroid Compounds when the price was reduced. It was reported that there was no prospect of Scherings doing this, but all were very happy at the way the other companies had agreed to give credit.

A member praised the Veterinary Price List. It was a most essential innovation. He noticed that in the earlier editions M. & B. lines had a retail price which had subsequently been deleted.

Mr. Thomas explained that this incursion into the Veterinary List was new. There was no known and standardised margin for many lines. However, as the list settled down margins would be established, and it would be possible to print retail prices for everything.

The new Veterinary List would be in three sections, the Veterinary Section, the Horticultural Section, and the third section, Veterinary Instruments.

Mr. Winterton suggested that the P.P. List should leave some space at the bottom of each letter for writing in the names of new items as they came out on the alteration sheet.

Mr. Cartwright explained the method which he adopted of filing the weekly sheets in the book and placing a tick alongside the articles where the price had changed.

Mr. Sam Morris referred to the broken quantities

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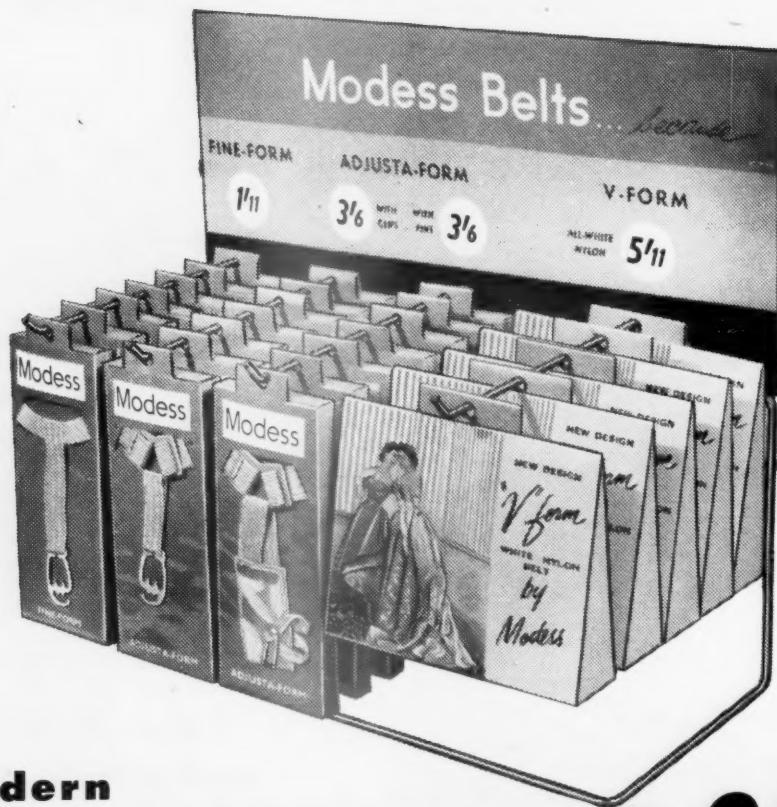
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table and list. He thought that the names of the items should be put on each side of the list which made it much more effective in referring to prices of broken quantities along the long line.

At this point Mr. Smith referred to the Guild Merchandising and Publicity Programme for the Commonwealth.

At the present signed approvals had been secured, 90 per cent. in Western Australia and Tasmania, 88 per cent. in Victoria. It meant the payment of $\frac{1}{2}$ per cent. on members' purchases to go into a special fund. The State Branch Committee had had one meeting on it. The Chairman of the special committee in New South Wales was Mr. R. W. Feller. A meeting of Zone Executives would be held in The Royal Commonwealth Society's rooms on September 10th to discuss the project.

The motion for adoption of the Annual Report, Balance Sheet and Accounts was then put to the meeting and declared carried.

Presidential Address.—Mr. Smith then delivered his Presidential Address dealing with Section 99 of the National Health Act.

At the conclusion of the address, Mr. Smith was complimented upon it.

"P.P. Guide."—A special announcement was then made at the request of Mr. Cossar, Chairman of Directors of the Australasian Pharmaceutical Publishing Co. Ltd., that the "Prescription Proprietaries Guide for Doctors and Chemists" would be coming out in November. Orders were being taken now by the "A.J.P."

Nominations State Branch Committee.—Mr. Smith announced that the following nominations for election to the State Branch Committee had been received: Messrs. K. W. Jordan, P. R. Lipman, W. F. Pinerua, L. W. Smith, K. E. Thomas and J. N. Young.

As no greater number of candidates had been nominated than required to be elected, he had much pleasure in declaring these gentlemen duly elected for the ensuing term. (Applause.)

Election of Sub-Committee.—It was resolved that the State Branch Committee be empowered to elect its own Sub-Committees.

Auditor.—Messrs. Holt & Thompson were re-appointed as Auditors.

General Business

Mr. Sam Morris said the N.H.V.P.A. Committee investigated the matter of adhesive cellulose tape. This had been submitted to the Federal Council but they could not cope with disbursements throughout Australia. He requested that the State Branch Committee should look into the production of a tape.

The matter was referred to Mr. K. W. Jordan for further investigation.

Composition of S.B.C.—Mr. Loxton said he would like the following motion discussed: "That the Articles of Association of the Guild be altered to allow the constitution of the S.B.C. to consist of members representative of each particular zone and that each zone appoint their delegate and alternate delegate to the S.B.C."

The motion was seconded by Mr. Wilkinson.

Mr. Loxton said the motion was not meant as a criticism of the State Branch Committee of the Guild; every member fully recognised the work done by the Committee. With the present zone organisation and the newer areas, it was advisable to give these zones representation by means of grouping. The State and Metropolitan areas should be divided into groups which would have a representative on the State Branch Committee. The constitution would need to be altered.

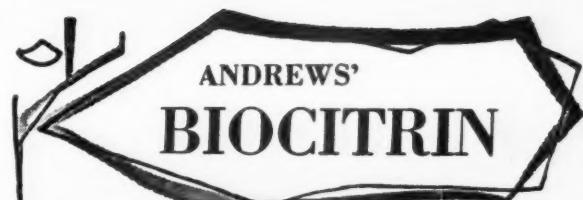
Mr. Winterton said the system of representation worked in Victoria.

A member said he felt that the present State Branch Committee was a democratically elected committee. It would be far too big with representatives as suggested by Mr. Loxton.

Mr. Wilkinson said that the outer areas felt they were out of it. If representatives of the various zone groupings sat on the State Branch Committee it would create more member interest.

A member said a good number of the zone members were not Guild members.

Mr. Faye said that when contentious matters affecting



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IN TABLETS AND IN SYRUP

Each tablet and each teaspoonful contains

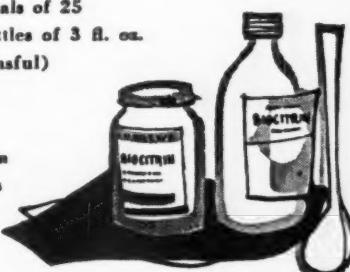
100 mg. of Citrus Bioflavonoid Complex

100 mg. of Ascorbic Acid

Tablets in vials of 25

Syrup in bottles of 3 fl. oz.

(25 teaspoonsfuls)



* Derived from
Citrus Fruits

Andrews Laboratories Pty. Ltd.

15 HAMILTON STREET, SYDNEY

MANUFACTURERS OF DRUGS AND FINE CHEMICALS

AL.78A.HP

NEW SOUTH WALES—Continued



NEW IMPROVED FLAVOUR

FORMULAE UNCHANGED

TUSSINOL with PHOLCODINE

COUGH SEDATIVE for CONTROL of IRRITATING COUGHS

Wholesale	Retail
Bottles of 8 fl. oz.	6/- ea.
	9/- ea.

ALSO

TUSSINOL

FOR RELIEF OF COUGH

Wholesale	Retail
Bottles of 8 fl. oz.	3/8 ea.
Bottles of 16 fl. oz.	6/4 ea.
	9/6 ea.



SYDNEY

AUSTRALIA

a zone were being discussed, a zone representative could be invited to the meeting of the State Branch Committee. People could not come in from the zones and vote without a full knowledge of the background to the matter being discussed.

Mr. Thomas pointed out that the work of the Guild was becoming more and more specialised, requiring a lengthy background of experience. The upsetting of the present system of the election of the State Branch Committee might be for the worse.

Mr. Stormon said a basic weakness was if you got a representative from each group you might exclude a most important member of the State Branch Committee with wide and varied experience.

Mr. Fraser said that it was impossible to work the Victorian system successfully in N.S.W. owing to the vast distances.

Mr. Hart said the motion stemmed from the desirability of State Branch representatives attending zone meetings. The Manly-Warringah Zone had enjoyed representatives from the Committee and one or two had suggested the extension of the State Branch Committee to cover a large number of zones. He felt that members of the present Committee were overworked in visiting the zones.

It was then moved that a zone executive meeting be held once a quarter. It was pointed out that this was not an amendment to Mr. Loxton's motion.

Mr. Dash Senior said it could be serious; it would upset all the State Branch Committee arrangements. The State Branch Committee could be replaced by zone representatives without the necessary experience to carry the work through. It could have far-reaching consequences. The matter should not be discussed without being the subject of a notice of motion.

Mr. Bohun said he desired to speak strongly against the proposal. He suggested to its sponsors that some things are best left alone. Let us keep our State Branch Committee representatives enthusiastic. Leave them to do their work which has been so well done in the past. This is not the time or place to alter the existing arrangements. The Zones need liaison with the State Branch Committee; perhaps the Guild would be prepared to employ one or two officers from 9.5 p.m. to promote liaison with the zones.

In reply, Mr. Loxton said that a number of good points had come out of the discussion. His idea was to ease the work of the State Branch Committee and save some visits to zones.

The motion was withdrawn.

Mr. Loxton to take the matter back to his zone for further discussion.

Agency Cosmetics.—A member said he would like to put forward a suggestion from his zone regarding cosmetic agencies. The firm were "standing over" the agents. He would like to see a committee of pharmacists-cosmetic retailers set up, formed outside the Guild organisation.

The Neilsen survey showed that chemists held over ten months' supply of cosmetics. This was too much stock altogether. If the agents had a single voice they could obtain more equitable treatment from the manufacturers.

A member said he had listened with interest. The Committee had given a great deal of consideration to the letter from the zone. One firm had a policy of expansion. Every agent was put on a quota which was increased from time to time, and if the agent was not selling his quota another agent was appointed. They indulged in practices which they would not do if the agents had the protection of the Guild.

When the zone wrote, it suggested no solution. Now only one answer was proposed—the formation of another association. If the member was prepared to give his time to the proposal and canvass the people who handle cosmetic agencies, he would get a great deal of support, no doubt. The membership might be 60 per cent. to 70 per cent.

Mr. O'Connell said the answer was, do not have an agency line.

Twelve persons voted for the suggestion of another organisation.

Guild Insignia.—A member proposed that the State Branch Committee investigate pharmacies which might have been sold to unregistered owners. It was suggested the State Branch Committee might investigate the fact that Guild Insignias are displayed on the windows.

Mr. Smith said they would have to be removed if the ownership reposed in a person who was not a member of the Guild.

Mr. O'Connell asked the State Branch Committee to inform members that agency lines are against the principles of the Guild.

A member referred to the price cutting of photographic lines. Hanimek slides were being advertised at cut prices. He referred to the Photographic Merchants' Association of Australia; the retail section of this Association had been active. Could the Guild make contact with that organisation on the matter of price cutting?

A member suggested that the Association's Retail Section should have a meeting and then approach the Guild secretary on the matter.

Mr. Jordan said he would like to receive a report of this price cutting. The Guild was getting good co-operation on price cutting generally.

The Chairman thanked those present for their attendance and declared the meeting closed at 11 p.m.

SPECIAL MEETING OF THE S.B.C.

August 29, 1958, at 8 p.m.

Present.—Messrs. L. W. Smith (Chairman), W. F. Pinerua, K. E. Thomas, R. S. Leece, J. N. Young, K. A. Cartwright, P. R. Lipman, K. W. Jordan and W. G. Sapsford.

Federal Council, Annual Meeting, October 26.—Mr. Smith said he had not yet had time to frame the remits relating to the four items previously brought up, including the repeal and re-enactment of Section 99 of the National Health Act in a more acceptable form.

It was decided that the Executive should frame the remits for transmission to the Federal Secretary for discussion at the Federal Council Meeting.

N.S.W. Publicity and Merchandising Campaign.—Meetings had been arranged as follows:

September 7: Zone meeting at Newcastle.

September 8: Second meeting with wholesalers.

September 10: Meeting Metropolitan Zone Executives.

Zone Meetings.—The immediate programme is:

Representation

Newcastle, September 7	Messrs. Smith and Conolly
Orange, September 14	Messrs. Thomas and Young
Goulburn, September 14	Messrs. Sapsford and Cartwright
Wollongong, September 21	Messrs. Feller and Pinerua
Wagga Wagga, September 21	Messrs. Thomas and Frew
Tamworth, September 21	Messrs. Smith and Conolly
Albury, September 28	Messrs. Cartwright and Leece
Lismore, September 28	Messrs. Jordan and Conolly
Dubbo, October 12	Messrs. Frew and (Jordan or Thomas)
Griffith, October 12	Messrs. Pinerua and Conolly
Parkes, October 19	Messrs. Bradford and Lipman
Gosford, October 22	Mr. J. Young. Night meeting.
Katoomba, October 22	Messrs. Feller and Sapsford. Night meeting.
Canberra (a night meeting, date to be arranged)	Mr. L. W. Smith

Report of Federal Trade and Commerce Conference.—Mr. Jordan said that the report had been circulated.

"Gilseal News".—Mr. Pinerua suggested that reports of the Zone Meetings, Metropolitan and Country, should be published in the "Gilseal News". These would be most interesting.

It was further suggested that a Presidential column should appear in the "Gilseal News".—Agreed.

Lavender and Musk—Faulding.—Mr. Jordan said the margins had been increased.

Introducing . . .

ENERTONE

ADULT FORMULA

WARNING: Enertone is now available in both "Infant" and "Adult Formula," each branded accordingly. DO NOT CONFUSE.

COMPOSITION ENERTONE—ADULT FORMULA

Pro-Vita Weat Harts—finely ground	50%
Soya Bean Flour Stabilized	9%
Medicinal Brewers Yeast	1%
Special Semolina—Stabilized	40%
The whole par-dextrinised, i.e. partly pre-digested.	

CHEMICAL ANALYSIS

Protein First Class	18%
Minerals	2.8%
Wheat Germ oil	4%
Carbohydrates	70%
Cellulose	0.9%
Sodium	0.722%
Iron (as Fe)	11 mgms. per oz.
Moisture when packed	5.3%

VITAMIN ANALYSIS

Vitamin A	75 I.U. per oz.
Thiamin	1.09 mgm. per oz.
Riboflavin	0.43 " " "
Niacin	7.40 " " "
Pyridoxine	10 " " "
Choline	25 " " "
Inositol	10 " " "
Vitamin E	4 " " "

Unsaturated Essential Fatty Acids. Enertone Adult Formula contains 6.5% of Linolenic and Lenoleic Fatty Acids, and is Cholesterol Free.

SPECIFIC THERAPEUTIC INDICATIONS

All Semi-Liquid Diets (as a thin gruel), Gastric and Duodenal Ulcers, Liver Disorders, Low Sodium Diets, Cardiac and Circulatory conditions, Gastro-Enteritis, Hepatitis, Under-developed children over 15 months, All patients recovering Physical Depletion after illness, of Special Value in Geriatrics. Where often many of the above conditions are combined in mild forms.

ENERTONE—ADULT FORMULA has many appetising uses. They are—As a thin gruel for Semi-Liquid Diets and as a between meal beverage Porridge, Boiled Custards, Baked Custards, or Blanc Mange—Recipes in every packet. This variety of Special dishes is a real boon to those on restricted diets, while the appetising flavour is appreciated too.

PACKINGS. 8 oz. packets 1/9, 24 oz. packets 4/6, available from all Wholesale Drug Houses.

MANUFACTURED BY

Pro-Vita Products Pty. Ltd.
422 Collins Street, Melbourne

COMPREHENSIVE RADIO ADVERTISING
ALL CAPITAL CITIES

Ingram's
LONDON.

Makers of fine surgical rubber goods
since 1847 and known the world over
for quality.

Famous trade names

PERFEX

ENEMAS

OMEGA

BREAST RELIEVERS

HERCULES

WHIRLING SPRAYS

Pharmacists: Your wholesaler is always
happy when your order specifies
the above lines because they are
guaranteed faultless.

Wholesalers: We are at your service
to assist with details for F.O.B.
ordering and carry small stocks
for your convenience.

AGENTS:

DORMAY CO. PTY. LIMITED

46 Alfred Street, Milson's Point, N.S.W.

NEW SOUTH WALES—Continued

D.H.A. Lectures.—Great interest was taken in the lectures.

Dispensing Fees.—Fee for Suppositories: Mr. Thomas said the Pricing Sub-Committee had not yet reviewed this fee.

Mr. Thomas suggested that the new scale of fees should be issued with the next issue of the Dispensing Drug Tariff.—Agreed.

Dispensing for Public Hospitals—New Agreement.—Mr. Smith said that arrangements had been made to interview the Hospitals Commission on September 9.

It was decided to attend, to advise Mr. Hammond, of the Hospitals Commission, and to place the new agreement before them for discussion.

New Members Elected.—Joseph Dimarco, Fairfield; Manuel Halicas, King's Cross; Miss Shirley Hallinan, Homebush; Ronald John James, Rutherford; Ralph Carruthers McKee, Dee Why; Ross Puglisi and Mrs. Joyce Puglisi, Neutral Bay.

Coronet Soap.—D.H.A. (N.S.W.) Pty. Ltd. wrote asking for clear reference to be made to the fact that Coronet soap should not be confused with other lines of merchandise under the Coronet brand solely sold to chemists. It was decided to publish the fact that Coronet soap is not related to the Coronet brand sold solely to chemists.

The meeting terminated at 11 p.m.

SEPTEMBER MEETING OF THE S.B.C.

Meeting held at "Science House", September 11, at 8 p.m.

Present.—Messrs. L. W. Smith (Chairman), W. F. Pinerua, R. W. Feller, K. W. Jordan, R. S. Leece, W. G. Sapsford, C. D. Bradford, J. N. Young, R. L. Frew, K. A. Cartwright and K. E. Thomas.

Election of Officers resulted as follows:

State President: There being one nomination only, Mr. L. W. Smith was declared re-elected as State President for the ensuing year. (Applause.)

Vice-President: Mr. W. F. Pinerua was re-elected.

Treasurer: Mr. R. W. Feller was re-elected.

Federal Delegate: Mr. R. W. Feller was re-elected.

Second Delegate: Mr. L. W. Smith was elected to the office of Second Delegate to the Federal Council.

Election of Sub-Committees resulted as follows:

Trade and Commerce: Messrs. K. W. Jordan, R. W. Feller, R. S. Leece, J. N. Young, K. A. Cartwright, R. L. Frew.

Dispensing: Messrs. W. G. Sapsford, L. W. Smith, K. E. Thomas, W. F. Pinerua, R. W. Feller.

Pricing: Messrs. K. E. Thomas, R. S. Leece, W. G. Sapsford, L. W. Smith, C. D. Bradford, P. R. Lipman, W. F. Pinerua, R. W. Feller.

Industrial: Messrs. L. W. Smith, W. F. Pinerua, R. W. Feller, R. L. Frew.

Board of A.C.A. Retailers' Shareholders: Mr. W. F. Pinerua was elected, with the Chairman for the time being of the Trade and Commerce Sub-Committee as alternate member.

Pharmacists (State) Conciliation Committee.—Mr. L. W. Smith, regular member; Mr. R. L. Frew, alternate member.

Nominations for Pharmacists Conciliation Committee: The President said the Department advised the present Committee ceased to hold office on the 14/9/58.

It was resolved that Mr. L. W. Smith and Mr. R. L. Frew be nominated for appointment as the Guild representatives on the Pharmacists (State) Conciliation Committee.

Pharmacists (State) Apprenticeship Council: Mr. L. W. Smith, regular member; Mr. R. L. Frew, alternate member.

State Liaison Committee: Guild Executive.

Representative on Health Week Council: Mr. C. D. Bradford.

Committee to Peruse Applications for Membership: Guild Executive.

Metropolitan Zone Committee: Messrs. J. N. Young, K. A. Cartwright, R. L. Frew, C. D. Bradford, W. F. Pinerua, P. R. Lipman, W. G. Sapsford.

Emergency Pharmaceutical Service (After Hours) Sub-Committee: Messrs R. W. Feller, K. A. Cartwright, K. W. Jordan, R. L. Frew, P. R. Lipman.

The N.S.W. Guild Publicity and Merchandising Fund Committee: Full State Branch Committee with Federal Delegate as Chairman.

Federal Delegate's Report.—Mr. Feller said that a meeting of the Federal Executive would be held next week.

Mr. Smith read to the meeting, the remits sent down for discussion at the Federal Council Meeting.

Guild Merchandising and Advertising Project.—Reports were presented as follows:

1. Zone Meeting at Newcastle: Mr. Smith said that the meeting on September 7 was moderately attended; all those present had voted for adoption of the scheme. All except two or three had signed the form of authority.

2. Second Conference with Wholesalers: Mr. Feller said that all wholesalers at the meeting on September 8 had agreed to co-operate in the collection of levies. The money would be remitted to a Trustee. The matter of expense to the wholesalers had been raised.

3. Conference with Metropolitan Zone Executives: This Conference had been held on September 10. The project was adopted with only one or two dissentients. A large number of authority forms had been collected at the meeting.

4. Conference with Nichols-Cumming Advertising Agents: It was recommended that Nichols-Cumming be accepted as the advertising agents for the N.S.W. State Branch of the Guild.

Moved Mr. Frew, seconded Mr. Jordan, that the State Branch Committee accept Nichols-Cumming as the advertising agents for the next 12 months.—Carried.

5. Zone Meetings at Manly and Auburn: It was decided that the zone meetings should be held on September 17 as arranged.

Concerning Zone Meetings generally in the Metropolitan area, Mr. Young was asked to plan a series of zone meetings to discuss the Merchandising and Advertising Project.

It was decided to advise Nichols-Cumming that they had been appointed as advertising agents and to arrange for a production planning meeting.

Reports of Sub-Committees were dealt with as follows:

(a) Trade and Commerce: Mr. Jordan said there was nothing of vital importance to report.

(b) Dispensing—Hospital Dispensing: Mr. Sapsford said the conference with the Hospitals Commission had taken place on September 9. Dr. Selle was in the Chair. Copies of the proposed new agreement had been given to the members of the Commission together with the advice received from Dr. Alexander Macne. There would be a further meeting soon, at which representatives of the Federal Health Department would be invited to be present.

(c) Pricing—Dispensing Fees, N.S.W.: It was stated this was a matter of urgency and a decision would have to be made at this meeting.

Mr. Thomas: "When shall we implement the new fees?"

It was decided to leave the fees for suppositories as they are and to issue the new dispensing fees with next week's Guild Service Bulletin. The fees would come into force on September 20, 1958.

It was decided to add to the D.D. Tariff, "the price of any formulary item shall be the full dispensed price".

Mr. Leece referred to the list of A.P.F. preparations which contained this instruction.

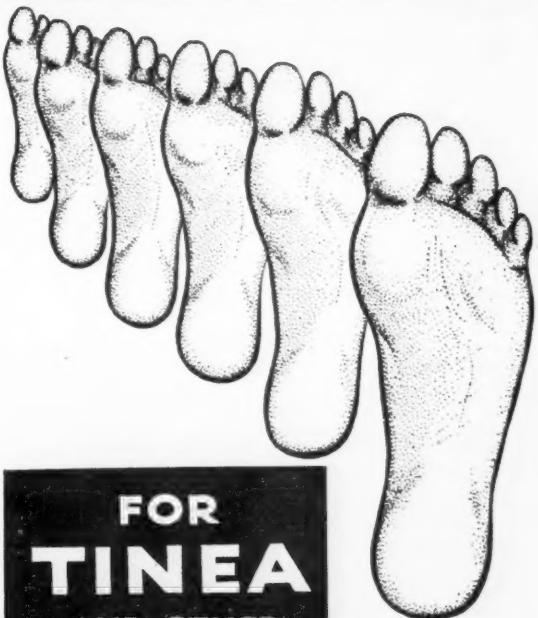
Correspondence.—Mr. L. S. Baggs, Parramatta, advising Zone Meeting will be held on September 25 at Nolan Bros.' Hall, 42 George Street, Parramatta. Requires Guild representation.—To be decided next week.

Mr. A. L. Finn, Sydney, regarding his proposed Pharmacy Service Bulletins.—Matter to be referred to the Trade and Commerce Sub-Committee for discussion. Mr. Finn had been invited to the next meeting of this Sub-Committee.

New Members Elected.—Margaret Jean Carlisle, Darling Point; John Nicholas Castanos, Botany; David Paton Deans, Gateshead; Colin James Green, Nambucca Heads; Ross Lyons, North Ryde.

Reinstatement.—Daniel John David, Coffs Harbour. The meeting terminated at 11 p.m.

UNDEX



**FOR
TINEA
AND OTHER
FUNGOUS INFECTIONS
OF THE SKIN**

In the summer months when tinea and other fungous infections become most active the demand for a dependable preparation for their treatment increases in proportion.

Undex, which has proven its effectiveness in the prophylactic and therapeutic treatment of these infections, becomes more than ever a necessity to every pharmacist's stock.

The Cream — in 20-gram tubes

The Ointment — in 2-oz. tubes

The Powder — in 3-oz. sprinkler drums

**ALFRED LAWRENCE & CO. LTD.
MELBOURNE**

VICTORIA

PERSONAL and GENERAL

State News

Members in Victoria desiring publication of personal items of interest are invited to write or telephone details to the Editor (FJ 5161).

Mr. J. P. Esslemont, of Pascoe Vale South, will leave Melbourne on October 6 for a visit to the United States of America. He will be absent until December 21. Mr. R. D. Briggs will be in charge of Mr. Esslemont's pharmacy during his absence.

Mr. and Mrs. L. M. Wilson, who have a pharmacy in Lorne, are leaving for England on the "Orontes" on October 4, with their son Denis. They propose working in pharmacies in London and Scotland, studying in particular the working conditions in all-night pharmacies. They believe many such pharmacies exist in England and that in the near future most capital cities of Australia will have all-night dispensaries for urgent prescriptions. Miss Yvonne Fidge will be managing their business in their absence.

BIRTHS

Green (Kneebone): To Nanette and Kevin, at Wangaratta Hospital, twin daughters, 31/7/58. (Deborah and Penelope).—Congratulations.

Tyndall.—Congratulations to Mr. and Mrs. R. D. Tyndall, Kangaroo Flat, on the birth of their fifth son (Paul Bernard) at Bendigo on September 23.

MANAGERS AND RELIEVERS—SEPTEMBER LIST

Manager or Reliever

Pharmacy

Beyer, Mr. T. H. Mr. G. E. Walker, Ashburton.
 Cameron, Miss C. Mr. H. A. Murray, Orbost.
 Christian, Miss D. M. Bowden's Pharmacy, Melbourne.
 Cwirn, Mr. L. U.F.S. Dispensary, Brunswick.
 Davies, Mr. H. E. Mr. B. L. Jacobson, Box Hill.
 Dawes, Mr. E. J. Mr. P. G. Gursansky, Dandenong.
 Digby, Mr. J. W. Mr. M. H. Lawson, Ringwood.
 Dunn, Miss M. Mr. E. J. Wilson, Wangaratta.
 Eccleston, Mrs. Mr. I. R. E. Clarke, Horsham.
 Everett, Mr. C. D. Miss P. Singleton, Bird's Pharmacy, Surrey Hills.
 Gardiner, Mr. J. Mr. J. L. Maher, Beechworth.
 Goldberg, Mr. A. H. Mr. W. C. Gribbin, Mentone.
 Gorr, Mrs. E. U.F.S. Dispensary, Brunswick.
 Gurry, Mr. L. F. Mr. and Mrs. J. W. Weir, Preston.
 Grant, Mrs. A. E. Mr. J. R. Bannerman, Clayton.
 Guthrie, Mr. B. Mr. C. S. Bowen, Clifton Hill.
 Hadden, Mr. J. L. Harris Pharmacy, Brighton.
 Hare, Mr. R. G. Mr. E. W. Price, Portarlington.
 Hays, Miss M. H. Mr. D. G. Quayle, Norlane.
 Hodgson, Mr. F. H. Mr. A. T. Galvin, Melbourne.
 Holland, Mr. J. Mr. A. Krantz, St. Kilda.
 Jarvis, Miss Cunningham's, North Melbourne.
 Johnson, Miss B. M. Miss M. L. Sharp, Myrtleford.
 Kenney, Mr. W. Mr. F. H. Bedford, Elsternwick.
 Kiers, Mr. J. Mr. N. F. Keith, Ashburton.
 Mr. N. F. Keith, Ashburton.
 Mr. A. W. Cocking, Blackburn.
 Mrs. Saunders, Bonbeach.
 Mr. R. B. Cummins, Benalla.
 Mr. P. A. H. Wright, Springvale.

Manager or Reliever

Lakeland, Mr. J. H.

Leith, Mr. R.

Lennon, Mr. C. B.

Lindell, Mr. E.

Meredith, Mr. P.

Mills, Mrs. L.

Morris, Mrs. E. E.

McDonald, Mr. B.

McDonald, Mr. D.

McNamara, Mr. P. T.

McFarlane, Mr. R.

Pagliaro, Mr. G.

Petterson, Mr. P. W.

Prince, Mr. D.

Rayner, Miss E. J.

Russell, Mr. J.

Shannon, Mr. J. D.

Sibel, Mr. A.

Stokie, Mr. D. G.

Stone, Mr. A.

Swedosh, Mr. W.

Thompson, Miss I. R.

Vanner, Mr. D.

Westlake, Mr. A. G.

Pharmacy

Mr. L. B. Allen, Collingwood.

Mr. L. B. Allen, Collingwood.

Mack's Pharmacy, South Melb.

Mr. A. Krantz, St. Kilda.

Mr. V. J. Gild, Melbourne.

Heathmont Pharmacy, Heathmont.

Mr. D. P. A. Mayson, Seymour.

Mr. T. G. Collins, Wangaratta.

Mr. J. E. Mahony, Belgrave.

Mr. C. F. V. Christensen, Pt. Melb.

Mr. H. B. S. James, Bayswater.

Mr. K. L. Gedge, Warrandyte.

Miss E. Rose, Yallourn.

Mr. C. H. Boan, Middle Brighton.

Mr. S. G. Robson, Hamilton.

Mr. D. P. A. Mayson, Seymour.

Mr. F. Montegano, Carlton.

Mr. W. H. Lawson, Glenroy.

Mr. M. Snyder, Balwyn.

Mr. W. L. Pike, Camberwell.

Mr. A. Krantz, St. Kilda.

Mr. J. F. Shannon, Warragul.

Mr. E. F. Sykes, Northcote.

Mr. H. Rockman, North Fitzroy.

Mr. A. Murie, St. Kilda.

Mr. A. Fulton, Clayton North.

Hampton Pharmacy, Hampton.

Mr. H. Spigleman, St. Kilda.

Mr. F. Ashley, E. Bentleigh.

Mr. G. Carter, Mornington.

Mr. L. R. C. Smith, Leongatha.

Mr. R. J. Benton, Alphington.

Mr. R. R. Cochran, Healesville.

Mr. D. G. Potter, Bairnsdale.

Mr. H. P. Cooper, Elsternwick.

Mr. J. K. Gosstray, Elsternwick.

Mr. L. V. West, Balaclava.

During Mr. N. J. S. Turnbull's leave, for health reasons, **Miss G. Hattam** will be in charge of his pharmacy at Toorak.

Miss B. Neuss will be in charge of Mr. J. M. Sloan's pharmacy at Mortlake, during his trip to Japan.

Mr. I. E. Russell is no longer manager of Mr. B. F. Huntsman's pharmacy at Ashwood, and is now with Mr. C. Gaunson, of Croydon.

During **Mr. V. G. Morieson's** holiday his two sons will be in charge of the pharmacy in Malvern.

Business Changes

The Pharmacy of the late **J. J. Cocking**, Hargreaves street, Bendigo, has been closed and the premises sold.

Mr. J. P. McCoy has leased Mr. J. L. Roney's pharmacies at Queenscliff and Point Lonsdale.

The following pharmacies have changed hands:

Mr. P. R. Collins from Mr. N. M. Bartley, Ocean Amphitheatre road, Sorrento.

Mr. R. K. Patterson from Mr. J. I. Darling, 74 Victoria street, North Richmond.

Mr. G. J. Lowe from Mr. H. R. Edwards, 91 Sunshine road, Tottenham.

New pharmacies opened at the addresses indicated:

Mr. A. S. H. Cattanach, 108 Miller's road, Paisley W.13, Brooklyn.

Mr. N. Maller, 393 Swan street, Burnley.

Mr. R. G. M. Ward, 183 Middleborough road, Box Hill South.

Mr. J. A. Daniel, Anderson street, Templestowe.

CHEMISTS' (SHOPS BOARD No. 6) WAGES BOARD

The Board has met and has varied its determination to operate from September 8, 1958.

The alteration is to provide for 25% extra to be paid for work performed on Saturday morning before 12 noon.



THE STIR OF
THE SEASON

DEXSAL

SETS NEW SALES RECORDS SEASON AFTER SEASON!

SOLID ADVERTISING SUPPORT BRINGS RECORD RESULTS

This has been a bumper year for Dexsal. Why? Because chemists who featured Dexsal in windows and on counters were backed up by both press and radio advertising. Big advertisements appeared regularly in metropolitan newspapers, and no less than 42 radio stations carried Dexsal advertising, too. Sell and recommend Dexsal — it's a 'chemists only' line that always is well backed by strong and consistent advertising support.



A 'chemists only'
line worthy of
your very special
attention



Worth Waiting For

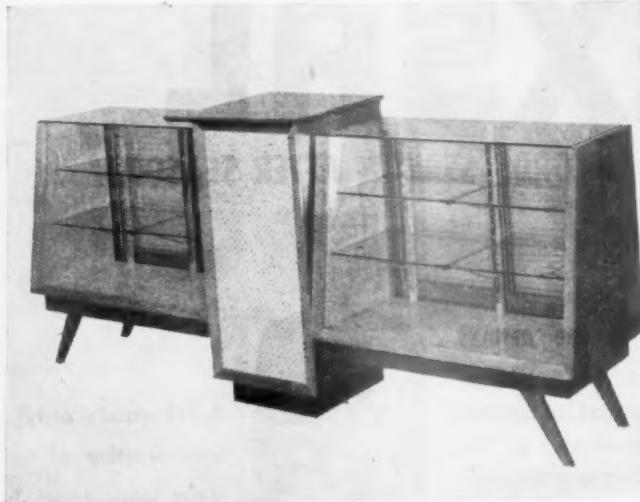
The girl with her charm and beauty, or doggie with its natural appeal, combines for a picture worth waiting for when you load your camera with ILFORD PANCHROMATIC FILM. You get results that combine everything the camera enthusiast could wish for.

It's a pleasure to sell it

For
PLACES
and
FACES



ILFORD (AUSTRALIA) PROPRIETARY LIMITED
Melbourne, Sydney, Brisbane,
Adelaide, Perth.



BOSTON SHOPFITTINGS PTY. LTD.
64 SYDNEY RD., BRUNSWICK N. 10
FW 1414, FW 6667

Smart Units
for Smart
Pharmacies

8 FEET LONG

£ 81 - 10 - 0

Less 2½% cash discount if
this advertisement quoted

Inquire about our store
planning service. We have
the "know-how" based on
60 years' experience.

VICTORIA—Continued

PHARMACY CLOSED

Mr. Keith F. Gardiner has closed his pharmacy at 459 Sydney road, Coburg, which he has conducted for a long time. Closing was necessitated by the sale of the premises. Mr. Gardiner proposes to enjoy a well earned rest before engaging in any further pharmaceutical activity.

PHARMACEUTICAL SOCIETY: DISCUSSION GROUP

The September meeting of the Discussion Group was addressed by Mr. Alistair Lloyd. The President, Mr. David Lumsden, was in the chair.

Mr. Lloyd gave some very useful information on the effects of radiation to the community. (It is hoped to publish a report in the October "A.J.P.") Many questions were answered at the end of the lecture.

Mr. H. A. Braithwaite, on behalf of those present, extended thanks to Mr. Lloyd at the conclusion of a most interesting and timely address.

G. K. Treleaven, Secretary, Discussion Group

LONG SERVICE LEAVE

Application of Tax Deductions

When an employee commences long service leave he may be paid in one of two ways. He may be handed the full amount due for the period of his leave at the commencement of his long service leave, or he may be paid weekly at the appropriate rate of pay.

The question of tax deductions on long service payments was raised by a member of the P.D.L. during the month, and the ruling given by an officer of the Department was—

- When the amount is paid in one sum at the commencement of the period of leave, the tax deduction is made at the rate of 5% (i.e., 1/- in the £).
- If the employee is to be paid from week to week during the period of his long service leave, the regular tax deduction according to the weekly deduction scale must be retained by the employer and remitted to the Department in the usual way.

OBITUARY

Mr. A. E. Moody

Mr. A. E. ("Bert") Moody was born in 1883, and joined the staff of Rocke, Tompsett & Co. Ltd. as a clerk in 1905. Steadily improving his position he acted as quotations officer, then as controller of the price list, stock valuer, estate agent (for the sales of businesses) and head of the employment bureau—the department furnishing managers, assistants and relievers.

He enlisted and saw active service in France in World War I. Kind, quiet, sober, sincere and sociable, he in his heyday made many friends within and outside the warehouse, employees and business folk alike.

Gradually weakening in health he was about to retire when a heart seizure on July 23 ended a useful career.

His successor is Mr. A. E. Allan, known to many as a suburban traveller for the company.

George Joseph O'Brien

It is with regret that we announce the death of Mr. George Joseph O'Brien which occurred suddenly while he was at work in the pharmacy of Mr. J. Oxley, Bentleigh, on September 9, at the comparatively early age of 39 years.

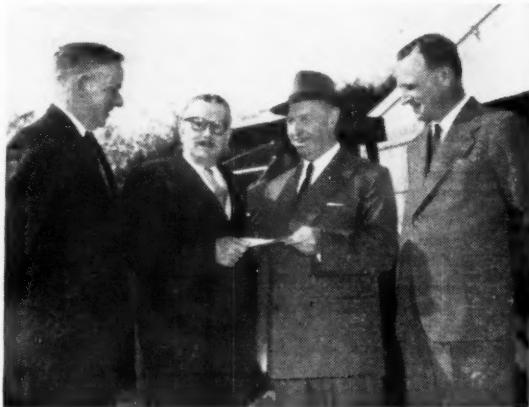
Mr. O'Brien was educated at St. Patrick's College, Ballarat, and was apprenticed to Mrs. Lakeland of Ballarat. He was afterwards with Hood & Co., Elizabeth street, Melbourne, and after qualifying, went to the pharmacy of Mr. Frank Gilbert at Bentleigh. This pharmacy was taken over by Mr. Oxley with whom Mr. O'Brien continued to work as an assistant until the time

of his death. Mr. O'Brien was a Fellow of the Society. He has been described by one who knew him well as "an ornament of the profession." He is survived by a brother and sister, to whom we extend our condolence.

THE VICTORIAN COLLEGE OF PHARMACY

Generous Gift By Sigma Co. Ltd.

The Directors of Sigma Co. Ltd. during the month announced the gift of £15,000 to the Victorian College of Pharmacy War Memorial Building Fund. This amount is to be allocated for the provision of the museum in the new building now under construction, and this room in the College will be known permanently as the Sigma Museum.



The Chairman of Directors of Sigma Company Ltd., Mr. C. P. A. Taylor, hands over to Mr. Eric Scott the cheque for £15,000. With them are Mr. F. C. Kent and Mr. S. J. Baird.

The Council of the Society has expressed its thanks to Sigma for this gesture and the good will accompanying it. Such contributions are of very great value, and it is hoped that when the present financial campaign enters the third phase, i.e., the approach to the wholesale and manufacturing industry, many equally generous contributions will be made.

The initial response to the appeal has been extremely encouraging. Just prior to going to press the Society announced that in the first few weeks 500 chemists in the metropolitan area had undertaken to give £49,000. Exceptionally few members had declined to contribute. These early indications suggest that prospects of attaining the target of £200,000, the minimum amount required, are bright.

PHARMACY BOARD

Monthly Meeting

The Pharmacy Board of Victoria met at 360 Swanston street, Melbourne, on September 10, at 10 a.m.

Present.—Mr. H. A. Braithwaite (in the chair), Messrs. A. W. Callister, K. Hartley, N. C. Manning, W. Wishart, the Registrar, Deputy Registrar and the Minutes Secretary.

Apologies were received from Mr. W. R. Iliffe (President) and Mr. S. J. Baird.

A.N.Z.A.A.S. Meeting.—Before proceeding with the business of the meeting the Chairman complimented Mr. A. W. Callister on the exceedingly good job done by him as President of Section "O" at the recent A.N.Z.A.A.S. Congress in Adelaide. He said Mr. Callister was a

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VICTORIA—Continued

worthy representative of the Board, and his Presidential Address on Drug Control was of great interest.

Amending Regulations.—It was reported that amendments to the Regulations and Schedules which appeared in the Government Gazette of July 23, were being reprinted and would be distributed to chemists by mail within a few days.

Model Course.—Inquiry from the Dean of the College indicated that he was engaged in preparing an outline of an ideal course for pharmacy, and this should be available before the date of the next meeting of the College Council.

Victorian Dairyfarmers' Association.—The Registrar reported that a copy of the verbatim report on the discussion concerning the distribution of Specified Drugs had been forwarded to the Secretary of the V.D.A. as promised.

Entrance Requirements.—It was reported that a circular had been prepared and sent to schools explaining the amending regulations which provided for the introduction of the Matriculation Examination as the entrance standard for pharmacy, as from the beginning of 1960.

Conflicting Drug Names.—The matter of similarity of drug names for differing preparations had been brought to the notice of the Pharmaceutical Association of Australia, which was taking the matter up with the Commissioner of Patents and Trade Marks.

Correspondence.—Letters dealt with included the following:—

From a country chemist, inquiring whether it was permissible to store a poison which was not a Dangerous Drug in the Dangerous Drug cupboard. Advised that the Regulations required that Dangerous Drugs ONLY should be stored in the D.D. cupboard.

From the Department of Health, advising that various proclamations amending the Poisons Schedules and Regulations had been published in the Government Gazette on July 23.

From Mr. K. G. Attiwill, enclosing transcript of broadcast re drug controls, "Melbourne Opinion," by John Pacini.

To a country member, advising that arrangements would be made for the disposal of a quantity of unwanted cyanide and other poisons.

From a chemist inquiring re the position of an apprentice who had spent six months in National Service Training with the R.A.A.F. Advised that under National Service Act this training counted as part of apprenticeship.

To several distributors of poisons, pointing out that distribution in plain bottles was contrary to the law, and instructing that the practice be discontinued; also that supplies already distributed should be recalled.

From a chemist submitting a prescription card system for approval. Card submitted approved.

From the distributors of a hair preparation, intimating that they would adopt the suggestion that vials of a component part of the pack when sold separately would be labelled with the name of the substance contained, but it was considered it was not necessary to label vials enclosed in the sealed unit package for retail sale. The Board directed that a further letter be sent requesting further consideration and pointing out the danger of the practice of letting any potentially dangerous substance be distributed unlabelled.

Formal Business.—The following formal business was transacted:—

Applications for Registration: Leslie Cwirn, Ph.Bd., N.S.W.; Paul Court, Ph.Bd. of N.Z.; Peter Liam Hickey, Ph.Bd., Qld.

Restoration of Names to Register: Clive William Mor-

ris, Norman Patric Stiles, Arundel Sheridan, Cyril Morwick Parkin.

Erasure of Names from Register: Leslie George Knapman, George Joseph O'Brien—deceased, 9/9/58.

Managers and Relievers Notified: 82.

Business Changes Notified: 4.

New Pharmacies Opened: 7.

Pharmacies Changed Hands: 4.

Apprenticeship Indentures Registered: 4.

Apprenticeship Indentures Transferred: 1.

Certificates of Exemption Issued: 4.

Certificates of Identity Issued: 4.

Opium Permits Issued: 14.

Permits to Purchase Cyanide Issued: 1.

Licences as a General Dealer in Poisons Issued: 1.

Licences to Sell Poisons Substances Issued: 17.

Licences for Hospitals to Possess Dangerous Drugs: 1.

Police Reports re Poisonings: Potassium Permanganate, 1, fatal; Paraldehyde, 1, fatal.

Final Examination.—The Chairman reported that the results of the August Final Examination were not yet to hand. It was agreed that the President be authorised to release the results for publication when the reports were received from the Examiners.

Chemist Before the Board.—A country chemist appeared before the Board at 12 noon and was called upon for an explanation regarding irregularities in Dangerous Drugs records which had resulted in his being fined. After hearing the chemist's explanation the Chairman administered a reprimand and intimated that if called upon to appear before the Board again in similar circumstances, more serious action might be taken.

Medico-Pharmaceutical Liaison Committee.—The Chairman reported that a meeting of the Medico-Pharmaceutical Liaison Committee would be held at an early date.

Labelling of Poisons Containers.—Further consideration was given to a communication from the Guild requesting a statement from the Board in regard to the labelling of poisons containers. In particular it was asked whether the labels specified in Regulations were required to be affixed to the actual container or whether they might be placed on the outer carton or pack.

After discussion and review of previous rulings the Board resolved that labelling of the outer container be accepted as a reasonable compliance with Regulations in respect of the following classes of pack:

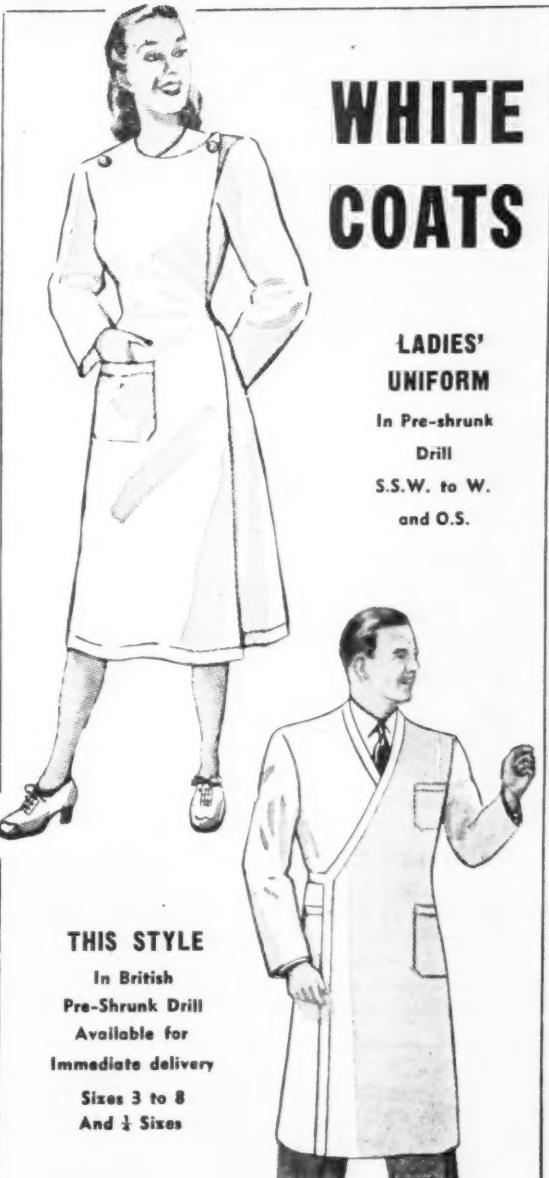
1. Sealed packages of biologicals (e.g., Lantigen).
2. Collapsible tubes.
3. Plastic squeeze packs.
4. Ivers-Lee type of tape packaging (e.g., Relaxatabs. pack).
5. Injectable preparations such as ampoules and multi-dose containers.

In all other cases labels would be required on the immediate container as defined in the Regulations.

Q.E.S. Poisoning.—Attention was directed to the death of a child aged fourteen months following the taking of Q.E.S. tablets. Following the inquest the Coroner had suggested to an officer of the Board that steps might be taken to circularise chemists requesting them to warn customers of the danger of leaving prescribed medicines within the reach of children and where the patient had inadequate knowledge of the English language, to make every effort to ensure that the danger was understood. The Coroner had been assured that the Board and the pharmaceutical organisations would co-operate.

Summary of Dangerous Drugs Regulations.—An inquiry was received from the B.M.A. as to whether copies of the summary of the requirements relating to the prescribing and dispensing of Specified and Dangerous Drugs, prepared some time ago, were still available. The Chairman said that supplies were almost exhausted. It was resolved that a redraft be proceeded with.

Agricultural and Horticultural Poisons: Containers and



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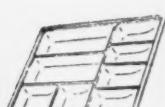
MELBOURNE: VIC. BROOKSHAW, Howey Court, 234 Collins Street. Phone: MU 5229. 791 High Street, Thornbury. Phone: JJ 1348.

ADELAIDE: CROWN WHITE COATS, 3rd Floor CML Buildings, 118 King William Street. Phone: W 7040.

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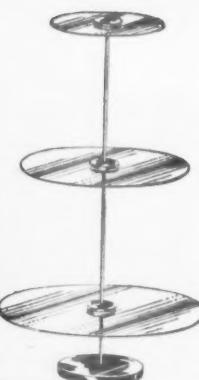
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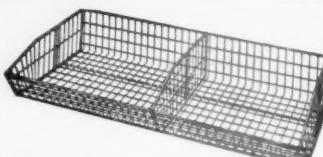
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TILL, 17/-



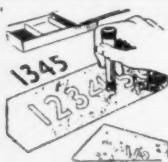
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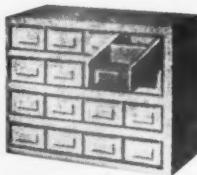


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VICTORIA—Continued

Labels.—A large number of containers of agricultural and horticultural poisons were submitted to the Board for approval. Some of these did not meet the requirements of the Poisons Act in that the poisons and poisonous substances were packed in clear glass bottles; others in foil packages similar to those used for certain food stuffs. The individual packages submitted were examined and it was resolved to forward detailed advice to the packers concerned as to alterations necessary to bring the lines into compliance with the Regulations.

In dealing with the inquiries the Board ruled that the words "Poison—Not to be taken" be accepted as a substantial compliance with the requirements that containers of poisonous substances be labelled "Poisonous—Not to be taken." It rejected a suggestion that in small containers of liquid preparations the paper label be allowed to cover the distinctive ribs, stars or flutes embossed in the glass, as this was in direct contravention of a specific requirement.

Financial.—The Hon. Treasurer presented the monthly financial statement which showed a credit balance of £2334/8/4, and accounts totalling £1304/14/- were passed for payment.

The meeting then adjourned.

PHARMACEUTICAL SOCIETY

Council Meeting

The Council of the Pharmaceutical Society of Victoria met at 360 Swanston street, Melbourne, on September 3, at 9.45 a.m.

Present.—Mr. E. Scott (President) in the chair, Mrs. P. A. Crawford, Messrs. S. J. Baird, A. G. Davis, F. W. Johnson, L. Long, C. N. McLeod, J. R. Oxley, K. Ramsay, F. C. Kent (Secretary), T. G. Allen (Minutes Secretary) and R. H. Borowski (Assistant Secretary).

Correspondence.—Correspondence dealt with by the Council included the following:

From Mr. K. G. Attiwill, forwarding a copy of a full-page feature published in the Geelong "Advertiser" in conjunction with the establishment of an all-night pharmacy in that city. Members of the Council expressed their appreciation of the excellent publicity.

To Professors F. H. Shaw and S. D. Rubbo, and Mr. W. R. Jewell, advising them of their election as Honorary Fellows of the Society.

To Mr. R. G. Grano, advising him of his election as an Honorary Life Member.

From Mr. H. I. Michael, re action taken in response to suggestion from the Council concerning the organisation of a Jewish Annual Church Service.

From the State Treasurer, advising that the sum of £195,000 had been provided for expenditure from loan funds for the building of a new College of Pharmacy during the current financial year.

The Hon. Treasurer, Mr. Baird, placed before the Council a letter from the Dean of the College, Mr. A. T. S. Sissons, offering a generous donation to the College Building Fund. He also read a letter from Mrs. Sissons, who forwarded a donation from her son, Mr. David Sissons, who is at present engaged on a project at the University of Tokyo on a travelling scholarship. The Council expressed appreciation of these two gifts and directed that suitable letters of thanks be forwarded.

Advertising of Professional Services.—Further reports concerning signs advertising professional services of members were received. A long discussion took place. Members of the Council were unanimously of opinion

that the time had arrived when members should be required to discontinue the use of such advertising, which was considered to be detrimental to the profession. Various means by which members could be compelled to abandon the practice of advertising professional services were discussed. In the two instances referred to the Council directed that the members be asked for an assurance that the signs would be removed.

New Members Elected.—The following new members were balloted for and elected:

New Full Members: Alan Beaumont Hall, Charles Maxwell Morris.

Transfer from Apprentice Membership: Rona Burns, Raymond Brian Durston, James Francis Gehring.

Apprentice Member: Maroa Josephine Shelton.

Library.—It was resolved on the recommendation of the Hon. Librarian, Mrs. P. A. Crawford, that the following books be purchased for the College Library:

"Electronic Theories of Organic Chemistry," by G. I. Brown. London. Longmans Green.

"A Companion to Physical and Inorganic Chemistry," by R. W. Stott. London. Longmans Green.

"The Chemistry of Synthetic Drugs," by P. May and M. Dyson. New Edition (1958). London. Longmans Green.

"A Modern Approach to Organic Chemistry," by J. Packer and J. A. Vaughan. London. Oxford University Press.

"A Century of Darwinism" ed. S. A. Burnett. London. Heinemann.

"An Introduction to the Biology of Yeasts," by M. Ingram. London. Pitman.

"Human Blood Groups and Inheritance," by S. Lawler and L. J. Lawler. London. Heinemann.

"Big Molecules," by Sir Harry Melville. London. G. Bell & Sons.

Dispensing at Pentridge.—A report was received that Mr. L. B. Allen, who had been providing pharmaceutical services at Pentridge Gaol for some time, was unable to continue the work.

Another member who had previously participated in the service had taken up the work temporarily. It was agreed that an endeavour be made to make suitable arrangements for a permanent service.

Building Campaign.—The President said that progress figures submitted to the Launching Committee indicated that to date £34,068 had been promised from 347 members who had signed pledge cards. 611 cards were still unissued and 730 were still in the canvassers' hands.

Much work remained to be done, but the results to date were encouraging. Members were contributing generously and it was hoped that the target amount would be reached.

The campaign was about to be launched in country areas and the tertiary phase, in which the wholesale and manufacturing trades would be approached, would be opened in November.

Arrangements for visits to country areas and the holding of meetings and dinners in the various areas for the launching of the appeal were submitted to the Council and approved.

Pharmaceutical-Dental Liaison Committee.—The Secretary said that the Dental Association had intimated that it would like to meet representatives of the Society.

This followed a suggestion made earlier that a Pharmaceutical-Dental Liaison Committee should be established. The pharmaceutical representatives nominated were: Mr. A. L. Hull from the Society, Mr. W. R. Iliffe from the Pharmacy Board, and Mr. J. Garvin from the Guild. It was proposed that a meeting be held on September 8 or 22. Items for inclusion in the agenda were suggested and general arrangements were approved.

Medico-Pharmaceutical Liaison Committee.—The President said that the State Branch Committee at its last

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VICTORIA—Continued

meeting expressed the wish that the Medico-Pharmaceutical Liaison Committee be called together. Several items of interest which the Guild wished to have discussed were mentioned. The Council agreed that a meeting should be convened as soon as possible.

Test Prescriptions.—A report was received from the analysts concerning check analyses made on behalf of members of test prescriptions taken by the Commonwealth Department of Health. In some instances the results of the analyses undertaken for the Society differed considerably from the results of the analyses quoted by the Department.

Animal Health Month.—A report from Mr. A. L. Hull, who represented the Council at a meeting called by various interested bodies to consider the holding of an annual Animal Health Month, was presented and was formally received. Mr. Hull had intimated that he would not be able to attend the next meeting of the Committee, and it was resolved that Mr. Baird should attend if possible.

Half-Yearly Accounts.—The Hon. Treasurer tabled the audited accounts for the half year ended June 30, and after giving some details concerning the principal items of receipts and expenditure, he moved that the statements be received. The motion was seconded and carried.

Mr. Baird also submitted the monthly financial statement which showed a credit balance of £12,307, and accounts totalling £6935/3/6 were passed for payment.

A.N.Z.A.A.S.—Mr. Baird reported that he attended the A.N.Z.A.A.S. Conference at Adelaide in August. Mr. A. W. Callister took the chair at most of the meetings of Section "O," being President of the Section. His Presidential Address on Drug Controls was very well received. A very large number of technical papers was submitted and most of these would be published in "The Australasian Journal of Pharmacy." The arrangements made by the South Australian Section Committee were excellent and the delegates received wonderful hospitality. It was resolved that the thanks of the Council be conveyed to the South Australian Committee and the Society for the hospitality and the excellence of the arrangements for the meetings.

Conflicting Drug Names.—Several instances of similar names being applied to drugs and medicinal preparations of different composition were brought to the notice of the Council. In view of the potential danger arising from the practice the Council instructed that the matter be brought to the notice of the Commissioner of Patents.

The meeting closed at 11.45 p.m.

THE P.D.L.

Directors' Meeting

The 405th meeting of the Directors of Pharmaceutical Defence Ltd. was held at "Guild House", 18 St. Francis Street, Melbourne, on September 17, at 9.45 a.m.

Present.—Mr. E. W. Braithwaite (in the Chair), Messrs. I. H. Barnes, W. J. Cornell, D. A. Lees and the Secretary.

Impact Damage.—A paragraph had been published in the August issue of the Journal and already some enquiries had been received.

Correspondence.—Formal correspondence tabled, and the following were amongst the letters dealt with:

To Mr. N. V. Orr, forwarding minutes of the August meeting and drawing attention to the discussion on the alterations to the Articles of Association. In his acknow-

ledgment, Mr. Orr said he had made himself available for talks to the N.S.W. Guild District Zones. He had already addressed three zones; two more were booked for September and October, and there was a later tentative booking. He had found these talks were particularly well received; increased business had followed, together with greater interest in and appreciation of P.D.L. generally.

To the F.P.S. Guild (Victorian Branch) conveying the suggestion made by Mr. Moore at the August meeting that the S.B.C. might be willing to approve an arrangement whereby members of the Board of Directors of P.D.L. would give a short talk at District Meetings in regard to P.D.L. and its activities, and matters of interest drawn from cases handled by P.D.L.

A question dealing with a premium for a lease had been referred to the solicitor. His opinion was that any new lease of three years or upwards was excluded from the provisions of the Landlord and Tenant Act, and therefore a premium paid for a lease of this duration would be legal. A premium for any other lease, in his view, would be illegal if made between the landlord and an existing tenant.

A number of questions dealing with Workers' Compensation insurance had been placed before Melbourne Fire Office Ltd. in accordance with a direction at the August meeting. The reply from the Manager of M.F.O. was read, together with extracts from the relevant statutes which he forwarded with his letter.

To the Branch Secretaries, asking that the Annual Returns—Annual Report, Accounts and Balance Sheet—be completed and forwarded so as to reach the Head Office not later than October 13.

The correspondence was received.

New Members Elected.—Leslie B. Allen, Collingwood; Peter R. Collins, Sorrento; Donald C. Matthews, Auburn; Mrs. Margaret P. Matthews, Auburn; Mrs. Barbara F. Stephenson, Highett.

Journal Report.—In the absence of Mr. Cossar (interstate), the Secretary reported that the main activity before the notice of the Committee of Management of the Journal at the present time was the new book "Prescription Proprietaries Guide for Doctors and Chemists". Attention was drawn to the four-colour illustration appearing as part of the Kodak advertisement on the front cover of the August issue. This had been very well received.

Legal Advice.—A member in another State who was negotiating for the purchase of a pharmacy in Victoria had sought guidance on some terms of a lease that had been tendered to him for signature and on the question of goodwill. He was informed that from its inception P.D.L. had recognised the undesirability of offering legal advice on any matter which affected two members of the company, and as both he and the prospective vendor were members of P.D.L. the Directors felt it would be preferable for them both to engage their own solicitors to advise from their respective viewpoints. The names of two firms of solicitors in Victoria were given from which he might make a choice.

Three inquiries regarding leases were received, and the Solicitor's advice forwarded.

Articles of Association.—Draft alterations of the Articles of Association had been submitted to the P.D.L. solicitor and endorsed, and copies had been forwarded to the Directors with the notice of meeting.

After discussion the draft alterations were approved for submission to the members at an extraordinary general meeting.

Financial.—In the absence of the Hon. Treasurer, the monthly financial statement was presented by Mr. Cornell. Accounts totalling £2051/16/8 were passed for payment.

After general business had been dealt with, the meeting closed at 12.30 p.m.

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VICTORIA—Continued

THE GUILD

S.B.C. Meeting

The State Branch Committee of the Victorian Branch of the Guild met at Guild House, 18 St. Francis street, Melbourne, on September 2 at 8 p.m.

Present.—Mr. F. H. Bedford (Vice-President), Chairman; Messrs. J. W. D. Crowley, A. K. Lloyd, A. O. C. Blake, C. M. Waters, J. K. Gosstray, S. M. Adams, G. W. Siebler, M. J. Miles, J. T. DeRavin, E. Scott, W. L. Hilyard, J. Garvin, W. J. Langtry, H. Marks, G. Carter, R. Grinlington, B. A. Locke, T. Payne and the Secretary.

Welcome to New Members.—The Chairman extended a welcome to new Members of the Committee, Messrs. G. Carter, H. Marks and R. Grinlington.

Correspondence.—From Australian Glass Manufacturers Pty. Ltd. concerning the standardisation of bottles. It was decided to write to the company for details of tolerances. Copy of a letter from Mr. Attiwill to the chemists combined in the Geelong Chemists' Night Service was discussed. Mr. Lloyd reported that the Service was dispensing twenty prescriptions a night. This raised the question of after-hour fees, and Mr. Lloyd moved that a letter be sent to the Geelong Chemists' Night Service recommending that Guild rates be charged for after-hour dispensing. The motion was seconded by Mr. Langtry and carried.

Executive Report.—The Executive report as presented by Mr. Bedford was adopted. Further to the matters reported, it was agreed that the Pharmacy Board should be informed that a meeting of the Medico-Pharmaceutical Liaison Committee was required and an agenda of items to be discussed should be forwarded to the Board.

Gilseal Company Director.—Mr. J. D. Clarke was appointed a director of the Gilseal Company.

Treasurer's Report.—The Treasurer's Report was presented by Mr. Crowley and adopted.

New Members Elected.—Messrs. J. L. Fleming, Richmond; P. R. Collins, Sorrento; V. A. Doquile, Yarraville.

Branches.—The following branches were recorded: Mr. T. A. Thomas, Crowdon; Mr. T. S. Clark, Newport West.

Election of Committees.—The following Committees were elected:

Pricing Committee: Messrs. F. H. Bedford (Chairman), A. O. C. Blake, N. F. Keith, R. I. Hamilton, W. R. Iliffe, A. Hull, M. Beaumont, D. H. Mellor, J. D. Mulcahy.

Trade and Commerce Committee: Mr. J. D. Clarke (Chairman), Members of the Executive and co-opted Members.

Wages Board Advisory Committee: Messrs. J. W. D. Crowley (Chairman), N. C. Manning, N. F. Keith, D. McEwen, E. Beacham, C. P. A. Taylor, K. L. C. Davies.

Victorian Pharmaceutical Liaison Committee: Messrs. N. F. Keith and S. M. Adams.

State Finance Committee: Messrs. J. W. D. Crowley, S. M. Adams, W. J. Langtry, F. H. Bedford. (Mr. K. L. C. Davies to be invited.)

H.B.A. Liaison Committee: Messrs. N. F. Keith and W. R. Iliffe.

Tripartite Committee: Messrs. N. F. Keith, J. W. Crowley, K. L. C. Davies, A. O. C. Blake, F. H. Bedford.

Publicity and Merchandising Project Committee: Messrs. G. Copeland (Chairman), E. Scott, F. H. Bedford, K. L. C. Davies, J. W. D. Crowley, A. Clyne, C. M. Davies, N. F. Keith.

P.A.T.A. Representatives: Messrs. H. C. B. Henshall and A. K. Lloyd.

Wages Board Representatives: Messrs. E. Beacham, C. P. A. Taylor, J. W. D. Crowley.

Hospital Committee Representatives: Messrs. S. M. Adams and A. K. Lloyd.

Health (Proprietary Medicines) Advisory Committee: Mr. H. C. B. Henshall.

State Medico-Pharmaceutical Liaison Committee: Messrs. S. Adams and J. W. D. Crowley.

Lodge and Contract Dispensing Committee: Chairman, Mr. J. Gosstray (co-opted to S.B.C.); Messrs. F. H. Bedford, R. H. MacAuley, W. R. Iliffe, E. F. Hayes, W. M. Craig.

State Dental-Pharmaceutical Liaison Committee: Mr. J. Garvin.

Co-option.—On the motion of Mr. Scott, seconded by Mr. Grinlington, Mr. J. K. Gosstray was co-opted to the S.B.C.

On the motion of Mr. Lloyd, seconded by Mr. Grinlington, Mr. Iliffe was co-opted to the S.B.C. It was agreed that he should be invited to attend when he so desires. Mr. Crowley stated that Mr. Iliffe had been on the S.B.C. for twenty-four to twenty-five years and had not missed a meeting.

Wages Board.—Mr. Crowley reported that the Board had been called together to discuss extra pay for Saturday morning. The Committee agreed to leave it to Mr. Crowley to argue the case.

Honorary Members.—Messrs. A. K. Lloyd and L. Hamon were elected honorary members for the current year.

District Reports were presented as follows:

District No. 3

After Hours Service: This district supports the principle that an "after hours service" be given to the public and should be controlled by Pharmacy—this service to be in the city proper.

District No. 13

S.B.C. Meetings: Mr. Marks moved a notice of motion for the next meeting that consideration be given to holding S.B.C. meetings quarterly in the daytime.

District No. 2B

After Hours Dispensing: A suggestion that a scheme be implemented for servicing after hour prescriptions was suggested, and it was left for districts to discuss whether they are individually prepared to make similar arrangements.

P.A.T.A.: The district urges greater support by Guild Members to P.A.T.A. It was decided to notify P.A.T.A. each month of new Members entering the Guild.

Dispensing Fees: It was decided to refer to the Pricing Committee the suggestion that the principle of the present schedule of dispensing fees be retained.

H.B.A.: It was decided to approach H.B.A. with the suggestion that triplicate receipt books would reduce the amount of writing required under the present system, and ask that this be incorporated in their next printing.

Two-for-One Offers: Mr. Blake moved that a remit be sent to Federal Council as follows: "Whilst supporting the ban on two-for-one offers it is desired that the decision be reconsidered where one of the articles is a sample and also where there is no interference in the price. This motion was seconded by Mr. Langtry and carried.

Pharmacy of Late J. J. Cocking: Mr. Marks reported that this Bendigo pharmacy had been closed after fifty-four years. The Committee decided that a letter should be sent to the district Secretary and to Mr. Alan Cocking, acknowledging the work of Mr. J. J. Cocking.

The meeting then closed.

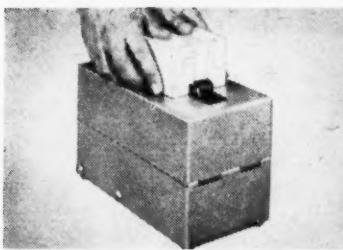


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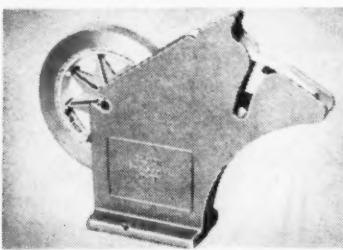
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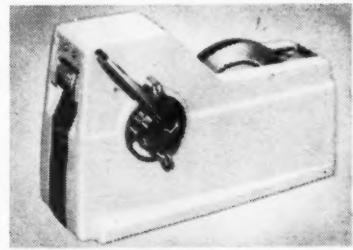
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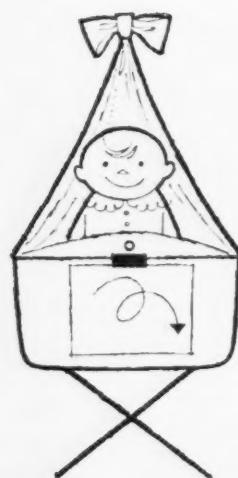
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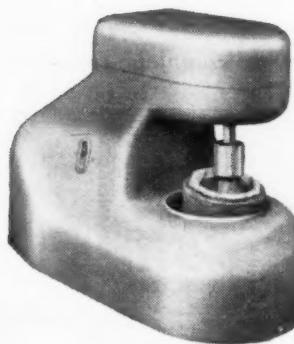
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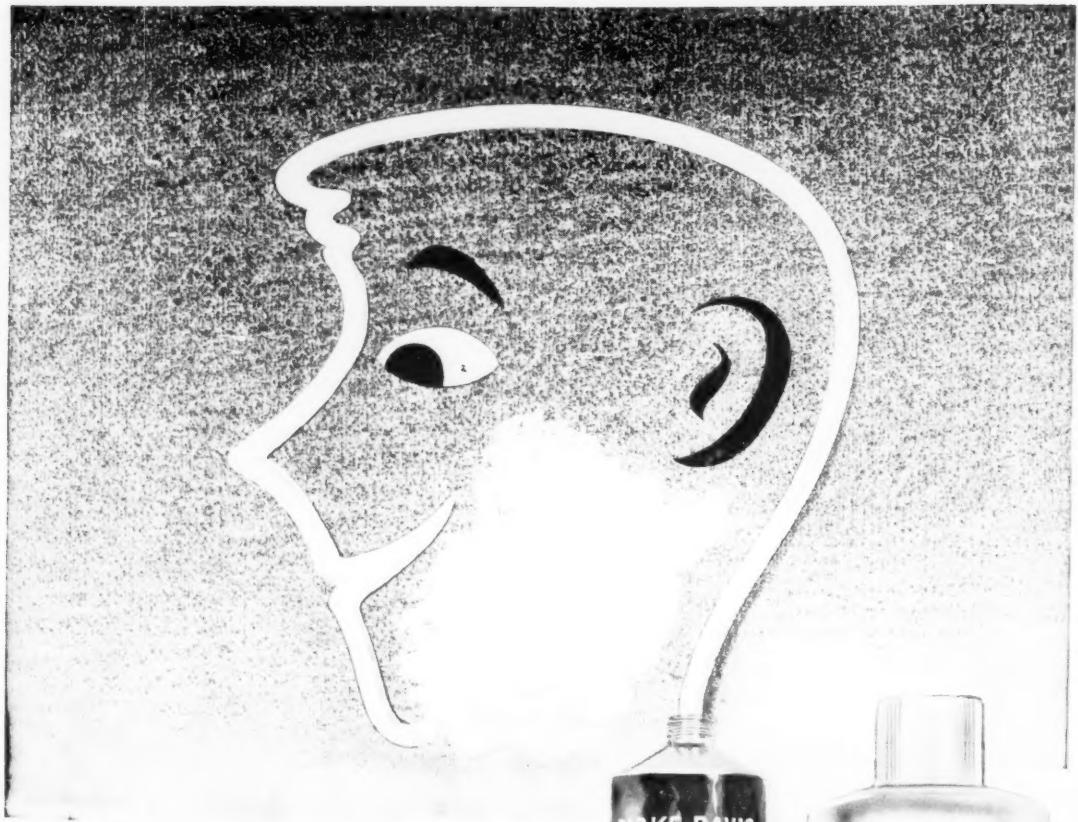
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